JULY, 1958

Industrial FINISHING

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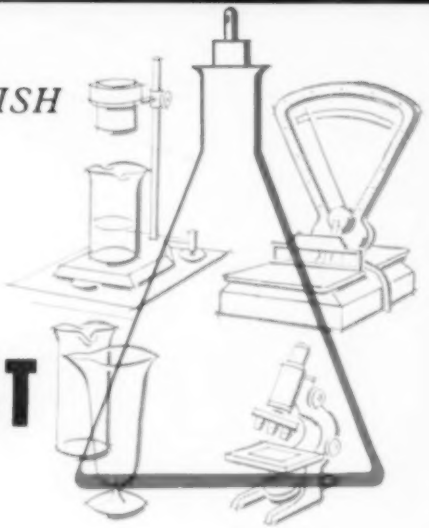
Our business at LILLY VARNISH is specifically the formulation, development and production of

INDUSTRIAL PRODUCT FINISHES



Down thru the years (since 1865) Lilly has earned an enviable reputation as a dependable source of supply for quality INDUSTRIAL PRODUCT FINISHES: Varnishes . . . Enamels . . . Lacquers . . . Stain & Wood Fillers . . . Metal Litho Coatings and Paper Coatings.

★ ★ ★

Why not let Lilly engineering design the finish to meet your specific needs?

LILLY VARNISH COMPANY • Indianapolis, Indiana

AFFILIATED PLANTS— LILLY VARNISH OF MASSACHUSETTS, GARDNER, MASS.
THE LILLY COMPANY, HIGH POINT, N. CAROLINA
PRODUCTOS AUROLIN, S. A., MEXICO CITY

New Thermosetting Acrylic Finish

resists detergents, abrasion, light and heat!

VITRILAN*

Now you can achieve a new excellence in finish performance with VITRILAN, Interchemical's *thermosetting* acrylic finish that brings improved all-around protection and lustrous beauty to appliances and other fabricated metal products.

VITRILAN is a really *new* finish that combines the color retention, the chemical and abrasion resistance of the acrylics with the hardness and toughness of a baking enamel.

Here's what this can mean to *you!*

. . . For home laundry and dishwashing appliances—outstanding soap and detergent resistance.

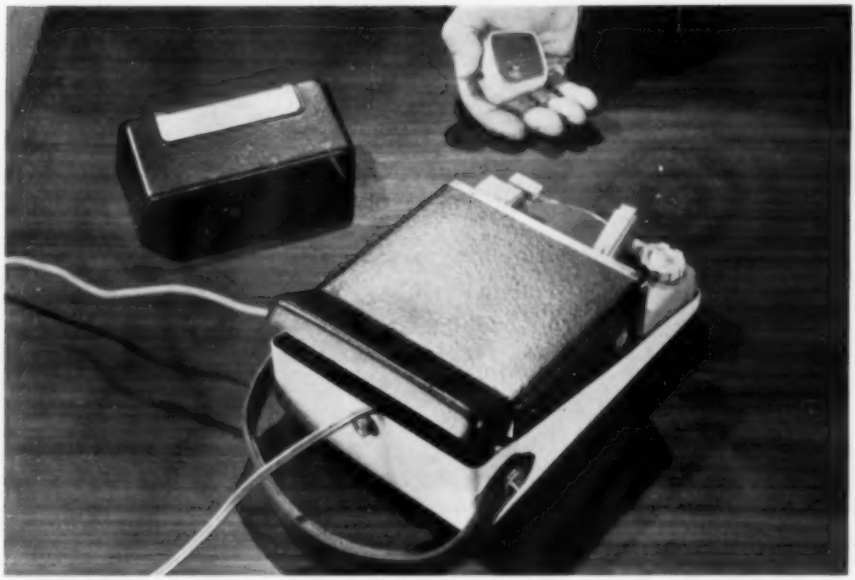
. . . For cooking and heating appliances—better color retention at temperatures up to 400°F., surpassed only by silicone finishes costing up to three times as much.

. . . For *any* appliance—improved resistance to abrasion, corrosion, food and drug staining plus remarkable gloss and color retention on exposure to light; produces whites that *stay* white longer.

For the complete story, write for the new bulletin on IC VITRILAN.

Interchemical
CORPORATION
Finishes Division

Headquarters Office: 224 McWhorter St., Newark 5, N.J. • Factories: Chicago, Ill. • Cincinnati, Ohio • Elizabeth, N.J. • Los Angeles, Cal. • Newark, N.J. • Mexico City, Mex. • In Canada, this product is made by Aulcraft Paints Limited, Toronto, Ontario, and sold under its trademark. **IC and VITRILAN are trademarks of Interchemical Corporation.*



ARMORSOL® coating on SOUNDSCRIBER

New vinyl metal coating in same price range as baked enamel and five times as abrasion resistant.

Basically a one-coat finish applied to metal, competitive with baked enamel, Armorsol can be made smooth or textured for approximately the same cost as baked enamel. Yet it is five times as abrasion resistant. Armorsol is a new and entirely different kind of vinyl metal coating requiring no primer, and has physical and chemical properties unlike any other finish.

Write today for free booklet and sample panel.

JOHN L. ARMITAGE ARMORCOID & CO.

Synthetic Enamels, Paints, Varnishes, Lacquers

245 THOMAS STREET · · · NEWARK 5, NEW JERSEY

"What a beautiful blending of finish and fabric on **clevelander** Danish Modern"*

The classically simple design of the Cleveland Chair Company's Danish Modern suggests furniture as practical as it is beautiful. This livability is further enhanced by the use of reversible cushions on the Guardsman finished elm frames. Created for Clevelander in our studios this finish is extremely tough and durable without sacrificing the mellow toned beauty that makes this group so distinctively different. The success of Danish Modern proves again that the right finish helps close the sale.

Sign of Saleability

A reminder to the salesmen and customers of the extra value to be found in Guardsman finished furniture. Available through your manufacturer.

Grand Rapids Varnish Corporation

Grand Rapids, Michigan

GRAND RAPIDS VARNISH CORPORATION OF NORTH CAROLINA, High Point, N. C.

Makers of the famous Guardsman® finish and Guardsman® cleaning polish. Studios in Grand Rapids, High Point, and Hickory

***The better the finish, the better the buy**

July, 1958
Vol. XXXIV, No. 9

BPA

A monthly magazine for company executives, production superintendents, process engineers, chemists, purchasing agents, paint shop and finishing department foremen of industrial plants where product surface cleaning and painting are major operations in the manufacture of parts and products of all kinds.

Industrial FINISHING

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Accepted as Controlled Circulation Publication at Indianapolis, Indiana

34 THIRTY-FOURTH YEAR OF PUBLICATION

Random Comment

Chart of Plant Layout. A fast and efficient means of charting equipment in a new plant, or planning to reshuffle equipment in your present plant is by scaled, printed tape.

It is called Graph-A-Plan system and consists of over 500 items. Besides plant layouts, also available are statistical charting, office layouts, organization charts and process and flow charts. Catalogs on each system are available from Labelon Tape Co., Inc., 450 Atlantic Ave., Rochester, New York.

* * *

Color Can Be Useful. Have you ever considered the use of color for storage shelves, tool or parts cabinets, etc. in the plant,

Do away with that drab deadening monotony of appearance where valuable parts are stored and where bright intelligent people are performing essential service every day. The use of color, even two-tone storage units, makes possible a brighter look in plant storage and warehousing and at the same time offers functional advantages.

Storage units in 12 standard colors are now offered by Standard Pressed Steel Co. of Jenkintown, Penn.

* * *

Furniture Finishes, Woods. Light warm finishes are edging out dark warm finishes because they help minimize the heavy look of large cases, but they are still close to the grain, sometimes distressed, sometimes oiled. Walnut, cherry, teak and mahogany, having the characteristics that are enhanced most by this treatment, are the predominant woods; maple, birch, oak and hickory are also getting a good play.

In the upper-end lines, woods are combined—walnut and butternut, wal-

Pump out water from your boat easily with new bilge pump (several sizes) made of vinyl plastic—non-inflammable, non-sparking and resistant to salt water. It's called "Thirsty-mate".—Clark Metal Products, Inc., Bridgeport, Conn.

Hold Everything!

Could you increase your sales if you had a better finish? *Many* firms have found they *could* . . . and they *did!*

We solicit your challenge to *improve* your finish or there will be no charge for the time or material we use in proving our point.

Whether your finish problem applies to wood, metal, Masonite or plastics, air dry or bake, lacquer or synthetic, pigmented or clear, our technicians are at your service in any of the territories we cover.

Write, wire or phone us *NOW!*

Outstanding Products

INSTANT STRIPPER — Fastest and Best #60 & 70 lines — Metal Coatings

SPEX — One Coat Multicolor Finish
HI-SOLIDS Lacquers

"From the Start Consider the Finish"

V. J. DOLAN & COMPANY, Inc.

Industrial Finishes of "UNQUESTIONABLE QUALITY"

1830 N. Laramie Avenue Chicago 39, Illinois

BErkshire 7-0100

nut and rosewood, walnut and paldao or ebony. There is less of parquetry and less of burl inlays, though some is still used.

There is less bright brass, but silver hardware is becoming very popular. Drawer space is included in tables for every use and in every style. —*American Furniture Mart.*

* * *

Heat Protection Clothing made of a new asbestos fabric called Silvabestos is announced by American Optical Co., Southbridge, Mass. A protective coating provides protection against splash and heat transmission and reflects 40% of radiant heat.

The complete line consists of gloves, mittens, sleeves, coats, pants, hoods, coveralls, bibs, aprons, leggings and spats. It is said to wear longer than clothing made of regular asbestos fabric. For example, workmen wearing Silvabestos gloves can handle 1200° F. steel with safety and ease.

* * *

New Plastic Adhesive has tremendous gripping power. It can be used to permanently bond wood to metal, metal to glass or metal to metal without welding or soldering. Also it adheres firmly to cement without keying; withstands 600-ft. pounds of impact per square inch; can be cured quickly under a heat lamp.

Twinweld is the name of the adhesive developed by Schramm Fiberglass Products, 3010 W. Montrose Ave., Chicago 10, Ill.

* * *

Furniture, Glides and Ferrules will be shown at the 1958 NAFM Supply, Equipment & Fabric Fair at the Conrad Hilton Hotel in Chicago, August 24 to 27, by Carr Fastener Co., Division of United Carr Fastener Corp.

More than 135 leading suppliers to the 2½ billion dollar furniture and woodworking industries will participate in the Fair. More than 2000 woodworking executives from the United States and foreign countries are expected to attend.

* * *

Prevent Damage in Transit. A new test center has been set up at La-Crosse, Wisc., by The Trane Co. to determine what, if anything need be done to Trane products, or their crating, to assure first class condition upon delivery. The object of the tests is to determine the stability of the unit and the shipping package in transit.

Through knowledge gained in vibration, drop and impact tests, various changes in reinforcement and packaging have resulted in reduced shipping weights, fewer damage claims, quicker service and more satisfied customers.

This testing is an excellent idea that might well be adopted by any manufacturer who ships his product.

* * *

Pneumatic Ship Fenders are being offered by Goodyear Tire & Rubber Co. to replace the traditional rope fenders which keep boats from banging or rubbing when tied against piers. The barrel-like, air-filled fenders are built like elongated passenger car tires.

* * *

Aluminum for Cans and Packages should multiply four times in the next ten years, according to P. C. Althen, manager of packaging sales development for Alcoa. In 1955, for example, 84,000 tons of aluminum went into packaging applications. By 1965, Alcoa expects the market will use 230,000 tons of aluminum. [*To page 39*]

no rubbing needed!

to produce a rubbed appearance or a waxed feel

PERFEX SATIN FINISHES

have long been recognized and acknowledged as the BEST flat finishes made. NOW these flat finishes have been made more desirable than ever because of these new features—

- Dust free time has been greatly reduced.
- Print free resistance has been greatly increased.
- Clarity has been greatly improved by its new pale color.
- Drying time has been reduced.
- Rubbed effect appearance and wax effect feel have been improved.
- Body and build have been improved . . a synthetic with varnish build.

PERFEX SATINS are available in a full range of sheens to produce the exact rubbed effect and waxed feel you wish.

PERFEX was the original "flat" to be made by a new and different process (without the use of stearates or flattening agents) and it is still the "flat" which comes nearest to producing an actual rubbed varnish appearance. It is the *Perfect* flat finish—quick set, quick dry, waterproof, liquor proof, good build, full smooth body, beautiful rubbed effect, smooth waxed feel.

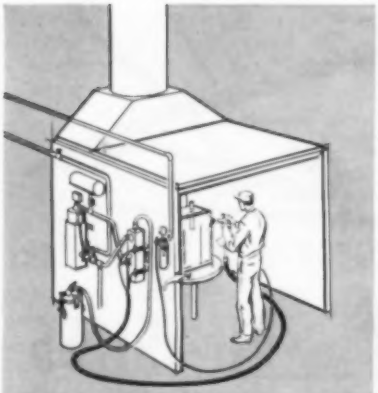
PERFECTION

If you manufacture furniture and are interested in securing an excellent rubbed finish effect, without a costly rubbing operation, we invite your inquiry.

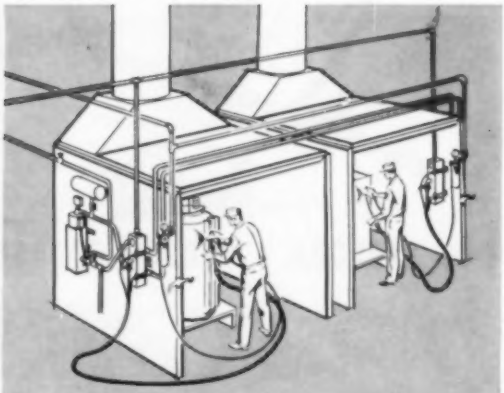
PAINT AND COLOR COMPANY

INDIANAPOLIS 2, INDIANA

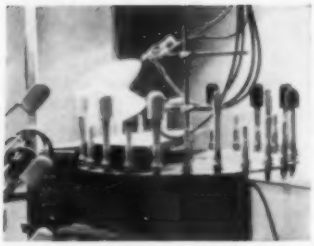
How DeVilbiss Hot



STANDARD OUTFIT . . .



ADAPTABLE TO MANY REQUIREMENTS



← *Automatic Spray Machines* coat any shape quickly, automatically, economically. Send for Series I-8000 Bulletins.

→ *Automatic Guns* spray drawing compound for accurate, controlled die lubrication. Send for Catalog I-1125A.

Spray cuts painting costs

Heavier film builds • Less overspray
Faster drying • Easier application
Fewer rejects
Better flow-out for high gloss

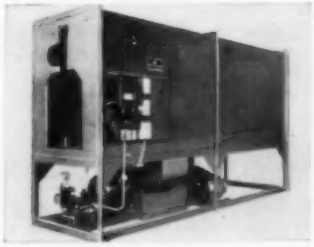
Using a DeVilbiss Paint Heater, you can get better coverage with *one* coat than you generally get with *two or more* cold-sprayed coats!

Here's why: Heat acts as a thinner to permit easier atomization and brings about new efficiency in spray painting. Even with your regular paint, heavier finishes can be applied with a savings of up to 50% in materials.

What's more, thinners are vaporized faster, drying time is decreased, finishes flow smoother and with less shrinkage. And the lower spraying pressure greatly reduces wasteful overspray.

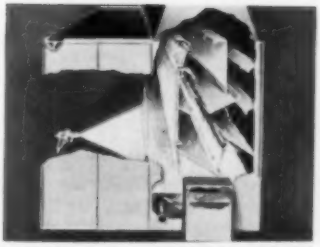
Call your nearest DeVilbiss branch today for the complete paint-heater story; or write for free booklet, "New Efficiency from Hot Spray." The DeVilbiss Company, Toledo 1, Ohio.

DE VILBISS



← *Ovens* are designed and built to meet your layout and process requirements. Send for Oven Catalog.

→ *Spray Booths.* Over 700 standard models provide efficient paint trapping. Send for Catalog I-7000.



Keeping profits on the boil: Can solvents meet the challenge?

Today's high standards in mass production metalworking have made metal cleaning a vital arm of production. With final operations demanding more rigid specifications and with final check-out increasingly automated, parts and pieces rejected because of improper cleaning can tie up your metal-cleaning assembly line. When that happens, costs go up, profits down. Are there solvents that can keep pace with today's high-speed, top-quality production? Here's news from Dow of an important trend that can mean better production, and profits, for the industry.

Light metals fabricator switches to Perchloroethylene

. . . cuts rejects, speeds production

A major light metals fabricator recently solved an annoying cleaning problem in its production line . . . it switched to Perchloroethylene for degreasing. Result: cleaner parts first time through, rejects and reruns cut to a minimum.

Their chief engineer says: "We had not thought of Perchloroethylene as a solvent for our cleaning line setup but when we ran into cleaning troubles on the line, our lab ran tests of Per against other chlorinated solvents. We found that particularly in the case of aluminum and other white metals we got better, reject-free cleaning and faster production because of the longer condensation time. Now we've standardized on Per".

Nationwide switch to Per. A high-placed metals-cleaning theorist recently predicted: "The odds are high that a substantial part of production-line metal cleaning will be done with Perchloroethylene in the next three to five years". Nevertheless, right from the start Per has had to combat the false economy story that goes like this: "The additional heat needed for Perchloroethylene makes the degreasing operation costlier than using other standard chlorinated solvents". Actual on-the-job performance tests have shown that, in most instances, any additional heat cost is more than offset by the savings from better cleaning.

Per wins Fahrenheit war. As metal-cleaning engineers know, the secret of Perchloroethylene's higher cleaning power is in its higher boiling point, for example, 250°F. as against 189°F. for trichloroethylene . . . a distinct advantage when removing entrapped moisture in porous metals, deeply recessed parts, and blind holes.

Although honor grades can be assigned tests of various vapor degreasing solvents, Per rates "A" in performance. As a quality performer it offers: higher stability, reduced staining, lower solvents loss, higher solvency power, longer cleaning action, and the elimination of moisture. As an added bonus it comes highly recommended for aluminum cleaning. These customer benefits put Per at the head of the class.

When the vapor trails of competitive solvent claims confuse, most metal engineers consult with a company that makes many different kinds of solvents and can evaluate them all impartially. Dow, for example, will be glad to send a copy of its new 24-page brochure "Modern Vapor Degreasing".

NEW "TRI" BY DOW

. . . helps missiles make clean getaway

Premature explosion of a rocket could be an expensive blast for everyone . . . especially the taxpayer. One of America's leading rocket builders hedged against its big birds going off half-cocked because of dirty missile hardware. A fast consultation with Dow revealed this story . . .

Today's big rockets use liquid fuels that employ an oxidizer (such as liquid oxygen) to burn the fuel. The oxidizer and the fuel are kept in separate tanks and then piped into a combustion chamber where, on contact, they explode and burn. The missile trouble-shooters found that metal-cleaning materials used had left a residue, not inert to the oxidizer. Result: premature explosion. The problem: Find the right cleaning material.

Scientists at the Dow laboratory in Texas immediately began development of a new high purity Trichloroethylene for cleaning missile hardware. They conducted pioneer shock impact tests on many different solvents; and from the data developed, created HI-TRI* (high purity Trichloroethylene) to meet the exacting requirements of the missile makers.

Dow also makes three other types of Trichloroethylene . . . neutral, alkaline, and extraction . . . for all sorts of down-to-earth uses.

Dow makes many chemicals for many jobs in the metalworking industries. If you would like to know more about them, please write THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Sales Department 761H.

*TRADEMARK OF THE DOW CHEMICAL COMPANY

Dow Chemicals Basic to the Metalworking Industry

Chlorinated Solvents
Brominated Aliphatics • Alkalies
Ion Exchange Resins • Glycol Ethers
Preservatives • Hydrochloric Acid
Phenolsulfonic Acid • Ammonia
Industrial Glycols • Polyethylene Glycols
Polypropylene Glycols

YOU CAN DEPEND ON

DOW

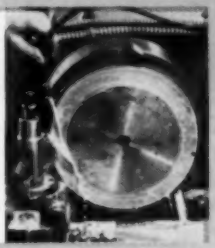
Four More Dow Chemicals *for the metalworking industry*

Chlorothene®

Dow's new, safer solvent. No appreciable fire hazard. No flash or fire point. Today's hottest cold-cleaner for electrical equipment and machinery.

Dowicide® A

Ends machinery's "Monday morning odor". Used as a preservative in soluble cutting oil, no bad odor at the machine will develop.

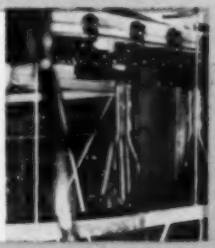


Sodium Orthosilicate

Recently improved S.O.S. by Dow is "nearly anhydrous". Metal-cleaning formulations with it cut through dirt and grease quicker than ever.

Methylene Chloride

Boil-point low, temperature high. Whenever the alloy is special and the temperature can't be too high, Dow's M.C. is the solvent of choice.



airless

SPRAY COATING

*Spray Painting Without Air

Spray Painting With Air — Airless

This new spray painting process (without air) will minimize your over-spray problems, reduce health and fire hazards, cut maintenance and clean-up costs, save paint, time and labor as well as reduce your auxiliary painting equipment requirements.

Over and above these advantages... a Better Finished Product is the final result.

Write for Airless Spray Painting brochure.

US NORDSON

NORDSON CORPORATION

FORMERLY BEDE PRODUCTS CORPORATION

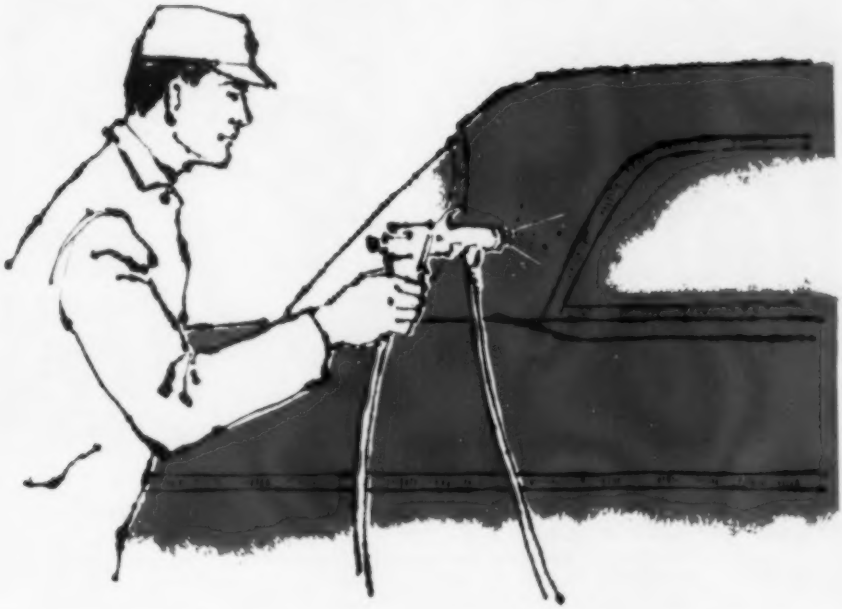
THE BEST IN SPRAY COATING EQUIPMENT

AMHERST, OHIO — YUKON 8-4473

In Canada 864 Pape Ave., Toronto, Ontario

For two-tone applications—use

TOUSEY *SPEED* DURACOTE

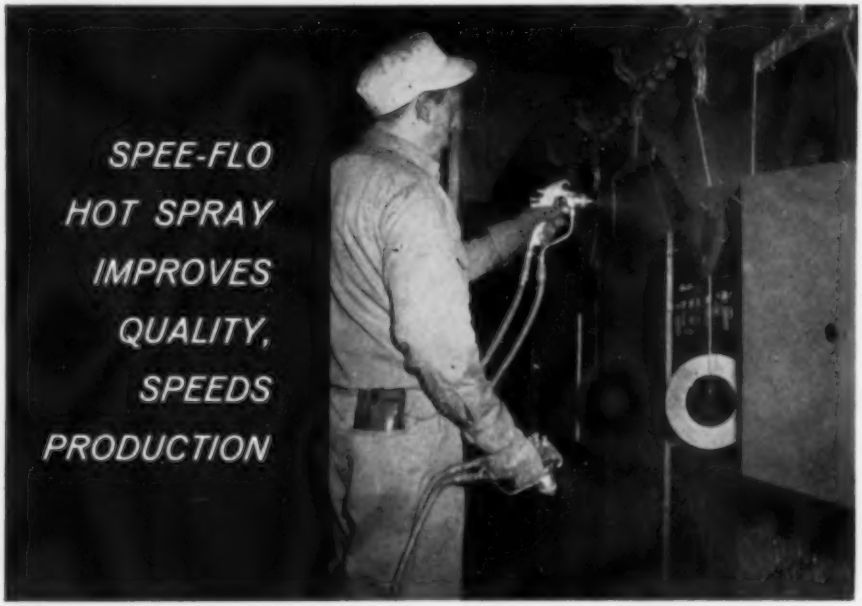


In less than 30 minutes after the initial spraying you can **safely** tape and recoat Tousey speed DURACOTE. Here is a high speed production finish with the durability of regular synthetic enamel.

Tousey speed DURACOTE also has a tack free time of less than 10 minutes and a dust free time of 20 minutes, or less. For a top quality finishing job where time does not allow normal air drying or baking use Tousey DURACOTE.

TOUSEY PRODUCTS
DURACOTE for DURABILITY

TOUSEY VARNISH COMPANY
520 West 25th Street Chicago 16, Illinois • Victory 2-2200



Bryant Manufacturing Company, division of Carrier Corporation, Indianapolis, Indiana, finishes about 60 different appliance parts using textured and metallic enamels in six colors. Following their switch to Spee-Flo Hot Spray, they were able to report the following improvements in quality control, material consumption and working conditions:

- **Improved appearance**
- **Smoother, denser, less porous film**
- **Considerable saving in paint**
- **Fewer rejects**
- **Reduced overspray**
- **25% less nozzle pressure**
- **Cleaner booths**

In many hundreds of different finishing applications, using almost every type of commercial finishing material, Spee-Flo Hot Spray has delivered these and other benefits. You don't have to be dissatisfied with your present finishing operation to appreciate what hot spray can do for you. Investigate its advantages right now — then arrange for a free on-the-job demonstration.

Write for free case history booklet "Why Hot Spray?"

THE **SPEE-FLO** COMPANY

6614 HARRISBURG • HOUSTON 11, TEXAS

127

NEW CONCEPT IN MODERN PAINTING TECHNIQUES

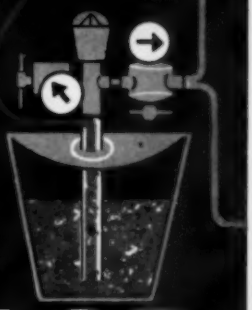
SPRAY 2 OR MORE COLORS WITH ONE GUN

ONE CONTAINER, IN ONE COAT

GET BEAUTIFUL VARIETIES OF TEXTURED FINISHES ON T.V. AND RADIO CABINETS, APPLIANCES, TOYS, POTTERY, METALS, LAMPS, FURNITURE, ETC.

MULTAKOLOR will create more sales . . . Ideal for most any product. MULTAKOLOR is applied with ordinary spray equipment, leaves no overspray. Dries in 15 minutes to touch, can be handled in one hour. Resistant to alcohol, grease, oil, crayon marks and ink. Excellent covering qualities hides imperfections and permits use of less expensive base materials. Touch up if necessary, cannot be detected. Stock colors may be intermixed to achieve many other interesting patterns. *Technical consultation on request. Write for free literature and color chips today.*

LIMITED NUMBER OF DEALERSHIPS AVAILABLE.



MULTAKOLOR

Veterans Administration Headquarters Washington, D.C. has approved United Lacquer's Multakolor as an interior decorative finish including bathrooms, kitchens, wood trim, sash and doors.

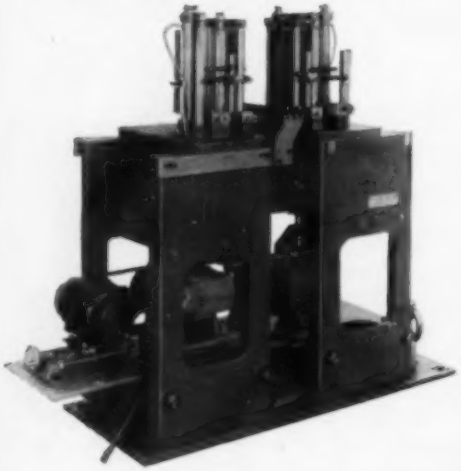
PAINTS SYNTHETICS UNITED LACQUERS ENAMELS

UNITED LACQUER MFG. CORP.

LINDEN, NEW JERSEY

Southern Distributor: Crown Paint, Inc.
985 W. 20th St., Hialeah, Fla.

THE NEW HAMANT DV-44 ECONOTWIN CUTS STRIP GRAINING TIME IN HALF



By Continuously Printing Both Sides at One Time!

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Industrial FINISHING

JULY, 1958, issue

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Surfaces to be completely or partially coated for protection, decoration or for any other purpose, include components and articles made of metals, plastics, woods, and composition materials; also paper, leather, rubber and fabrics.

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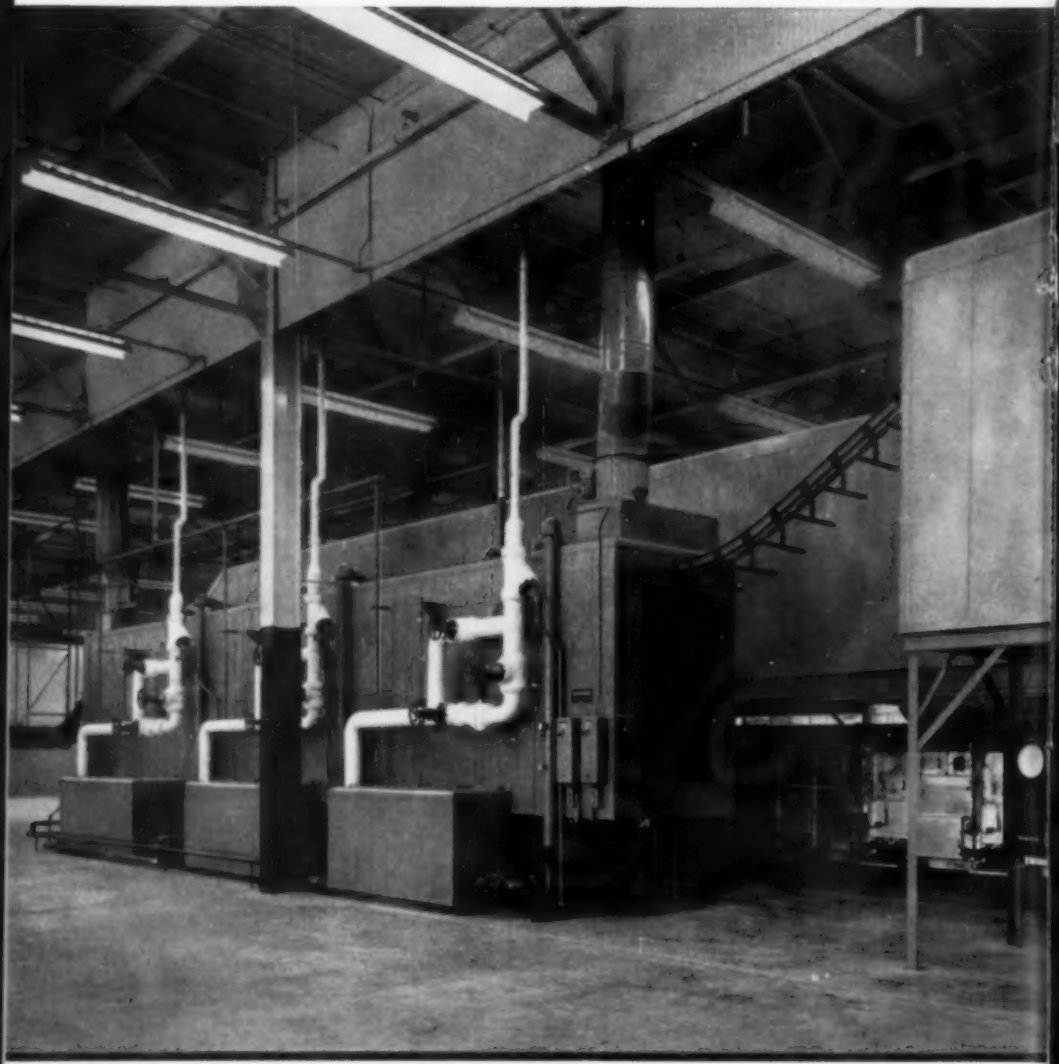

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The complete, modern finishing system, appearing at the left, was planned, engineered and recently installed by Mahon in a plant of one of the major manufacturers of Metal Office Furniture.

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See Sweet's Plant Engineering File for Information and Typical Installations or Write for Catalogue A-658

MAHON

A Compact and Complete Product Painting System

Helped to Boost Production 300%

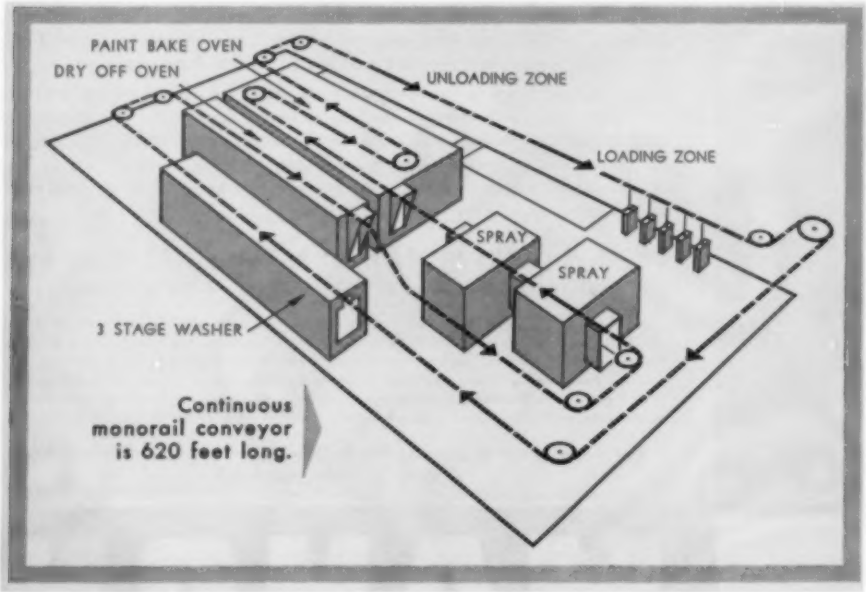
PRODUCTION finishing that formerly required three 9-hour shifts now takes only one shift". That's what the Hoffman Engineering Co., Anoka, Minn., reports on its new power finishing system.

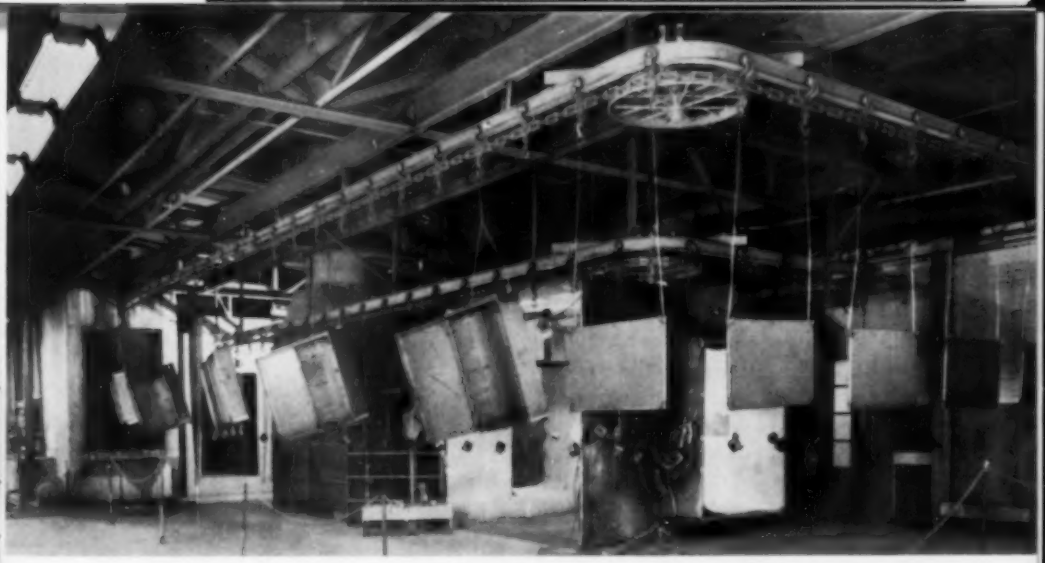
The conveyorized system (with 3-stage washer, dry-off oven, two water-wall spray booths, and a bake oven) enables Hoffman to paint all of its steel fabricated products automatically except for individual spraying. These products range in size from small electrical outlet boxes to 5-ft. enclosures.

Hoffman's former method of product painting included an electrostatic spray booth, transfer trucks and batch-type oven facilities. Elaborate setups were required for the various methods used.

Washing; Spraying and Baking Operations Are Conveyorized

Versatility is the key feature of the new continuous conveyor system. It includes readily regulated





Here, on the near conveyor line, products are moving from right to left. At left they enter a 3-stage washer. At exit of washer the conveyor makes a U-turn and comes back through the dry-off oven where you see it in background moving left to right. Then it doubles back through two reverse-position spray booths, then travels through an oven and finally returns to the unloading and loading stations.

washing, spraying, baking operations and conveyor speed controls to meet today's varying production needs and anticipated future needs.

Referring to the accompanying flow chart and photograph as a guide, you can easily follow a Hoffman product through the entire sequence of operations from bare metal to baked finish.

The combination loading-unloading zone is 68-ft. long, giving ample work area for handling the fabricated products. Various steel hooks and clamps are used to secure the large boxes and their attached doors for steady travel along the overhead continuous monorail conveyor. Small parts, such as outlet boxes, may be mounted on racks, as many as 16 to the rack, for suspension on the conveyor.

Speed of the conveyor is readily adjustable in any range from 3-ft. to 9-ft. per minute—depending on the spraying time required and the time-per-piece required in the bake oven. Its speed while carrying the panel enclosures, shown in photograph, is 5-ft. per minute.

While washer controls and bake oven controls are located near their respective units, the conveyor controls are located at the first spray booth. This arrangement gives the painter complete control of the system.

Clean; Phosphatize; Rinse; Dry-Off Oven

The first and very important phase of the finishing operation is the proper preparation of the metal to provide a clean surface that will accept and hold the paint to be applied. The Hoffman system utilizes a 3-stage washer 45-ft. long; its stages include 1) cleaning and phosphatizing, 2) plain water rinse, and 3) chromic acid final hot rinse,

with adequate drain facilities following each rinse.

When the system was planned and laid out, provision was made to expand the washer to five stages if or when this might be desired to meet future requirements.

From the washer, products travel into the dry-off oven. This unit, 38-ft. long, may be operated at any desired temperature up to 450° F. to assure proper drying of products that have been wet processed in the washer. By the time the products reach the first spray booth they are sufficiently cooled for immediate painting.

Two Spray Booths Face in Opposite Directions

Two 10-ft. water-wall spray booths are used in the Hoffman system. As shown on the flow diagram, one booth faces one direction, the other booth faces the opposite direction. Because spraying in a water-wall booth is largely confined to spraying in one direction (into the water wall), to assure maximum efficiency in the disposal of overspray the two booths are positioned in opposite directions. This makes it easy for two men, one in each booth, to paint both sides of large products such as the panel enclosures.

Various conventional primer and finish coat paints may be applied interchangeably in the booths. A week's production of one product involving one paint makes it feasible to reclaim the over-flow. Reclamation of several, intermixed paints in the over-flow is not considered practical or worthwhile.

Gas Fired Bake Oven; Cooling, Handling, Packaging

Spray painted products are conveyed directly into the gas-fired bake oven, where the paint is properly cured. As noted on the flow diagram, the bake oven in the Hoffman system, though only 38-ft. long, gives maximum baking time per piece through three passes. With the conveyor speed set at 5-ft. per minute, for example, the total baking time is 25 minutes.

Hoffman uses its bake oven at various temperatures up to 450° F., depending upon conveyor speed, room temperature and optimum curing temperature for the paint involved. For lacquer finishes, the oven is operated at room temperature.

As products emerge from the bake oven they become sufficiently cooled for handling and packaging by the time they reach the unloading zone.

The over-all system occupies a floor area 104-ft. by 44-ft., with provision, as mentioned, for future expansion of the 3-stage washer to a 5-stage setup; this would require an additional 13-ft. in length.

Acknowledgment: Story and pictures supplied by Harold C. Walker for Despatch Oven Co., Minneapolis.

Eric Foote; Diversey Corp.

Eric Foote, Assistant to the President of The Diversey Corp., has been elected Vice President in charge of Diversey's manufacturing operations in the U. S. Mr. Foote, 33, is one of the youngest executives in the history of the Chicago company, world-wide manufacturer and distributor of chemical products and detergents for industrial use.

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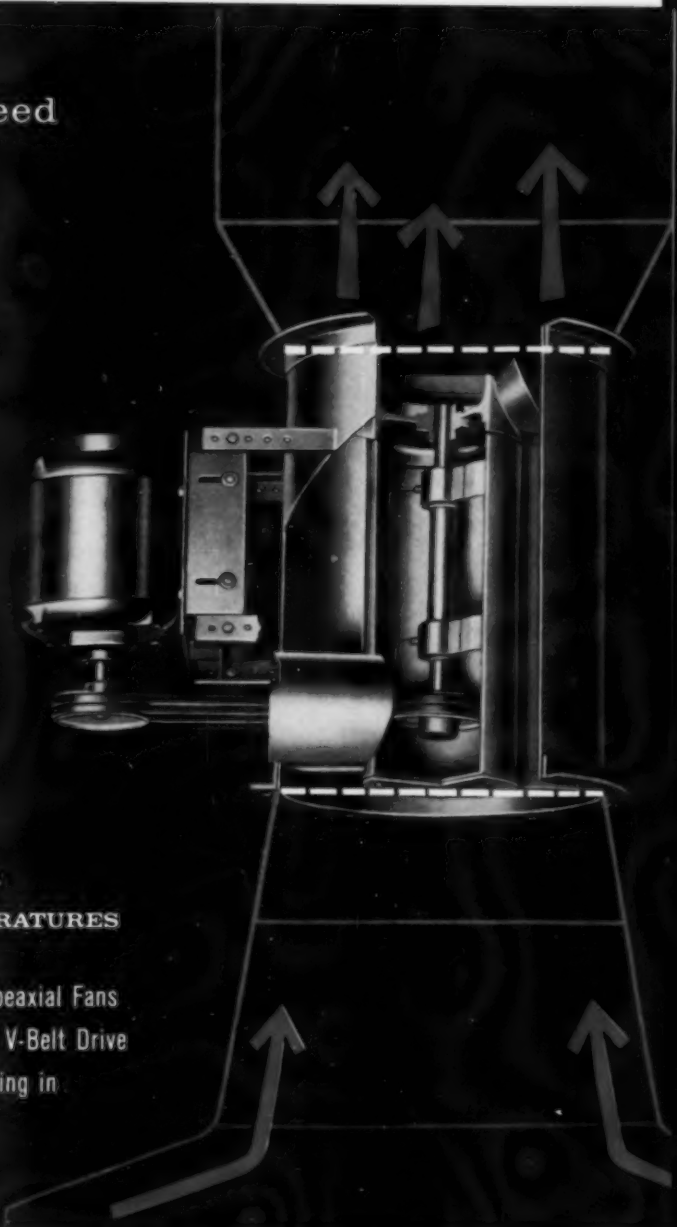

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YOU CAN BE SURE...IF IT'S Westinghouse

J-80641-A

The interior of each camera body—made of molded phenolic—is sprayed with one coat of non-reflective Epon-based black.

Phenolic Camera Parts Are Now Epoxy Coated

A NEW tough enamel based on epoxy resins is now being used to coat the phenolic interiors of Kodak Signet 40 Cameras manufactured by Eastman Kodak Co.'s Apparatus and Optical Division. The coating has enabled Kodak to speed up production and at the same time produce an even finer camera than before.

One of the typical epoxy coatings used by Eastman produces a hard, chip-proof, scuff-resistant surface with a single spray application. It is available in simulated metallic finishes as well as in a spectrum of brilliant colors.

Adheres to Molded Phenolics; A 2-Component System

The development of a coating which adheres permanently to molded phenolic products represents a major break-through in a barrier that has long plagued the plastics industry. Previously, manufacturers who wanted color in their products could not use low-cost phenolic since it can be molded only in black or brown. Now the economical phenolic resins can be used and the molded items can then be finished in almost any color and in simulated metallic finishes, at a cost as low as one cent per

Interior of molded body of the camera is sprayed with an epoxy finish to eliminate all possibility of reflectivity.

square foot. And not just phenolics —this type of coating formulation has been applied successfully to glass, zinc, wood, other plastics and various metals including even stainless steel and chrome plate.

This epoxy coating material is a 2-component system based on an Epon resin manufactured by the Shell Chemical Corp., and suitable hardening agents. The coating components and hardeners are mixed just prior to application; pot life of the mixture is approximately 36 hours. Cure of the enamel to the point where items may be handled can be obtained by air drying for two hours or by force drying at 140° F. for one hour; or by baking for 10 to 20 minutes at a temperature of 250° F. The choice of curing schedule is generally dictated by production line scheduling requirements, but the ultimate properties will result regardless of the curing schedule employed.

After the coating is applied, the racks of sprayed camera bodies are attached to a conveyor which carries them through the drying oven.

Non-Reflective Black; No Need for Sandblasting

The special coating applied to the Signet 40 is a dull-luster finish which has a scanning incidence gloss of zero. It provides a black, non-reflective finish which absorbs virtually all stray light rays. Such rays, if reflected toward the the film, could impair the high quality of photographs taken with the camera.

According to Kodak engineers, the enamel has enabled them to improve certain manufacturing operations. Formerly, it was desirable to sandblast the interior of black phenolic camera parts to assure good adhesion of any conventional air-drying lacquer. Now, the epoxy enamel provides the required interior finish without the need for sandblasting.

The molded phenolic body represents the basic structure of the Kodak Signet 40 Camera. After the interiors have been sprayed with this enamel, the camera bodies are loaded onto metal trays. When full, the trays are inserted into a portable 20-tier rack. The rack is connected to a conveyor which carries the bodies through the force-dry oven. [*Continued on page 28*]

[*Continued from page 27*]

Air Dry or Low Bake; Saves Finish Operations

Distortion of phenolic parts, which otherwise could result from oven curing of conventional finishes at temperatures in the range of the phenolics distortion point, is avoided by the use of air drying and low baking temperatures permitted by the new epoxy finishing material.

In some applications, epoxy enamels eliminate multi-step coating procedures. For example, because of its excellent adhesion to even the highest gloss phenolics, a single coating of an epoxy enamel may replace the 2-step operation of using both a primer and lacquer. Also, the steps in wrinkle finishing may be reduced. The production steps for one particular product formerly included priming, baking, wrinkle finishing, baking, top coating and baking. Now it is possible to use the same epoxy coating as a primer under the wrinkle, and as a top coat over the wrinkle. Since the epoxy coatings may be air dried, this procedure can eliminate two of the three baking operations.

Belt Conveyor Bulletin

A fully illustrated 4-page bulletin with complete details on the new Series "L-M" Horizontal and Inclined Belt Conveyors has been published by The E. W. Buschman Co., Clifton and Spring Grove Ave., Cincinnati 32, Ohio. The new "Catalog 80" describes the complete line of Buschman "L-M" stock components, as well as detailing how they can be customized to meet the requirements of any warehouse or factory for a light-medium conveyor system.

For more data, circle 25 on colored card.

Tousey Varn. Quad-Cities Div'n. Opened at East Moline, Ill.

Opening day ceremonies for Tousey Varnish Co's. new Quad-Cities division plant in East Moline, Illinois, were held recently.

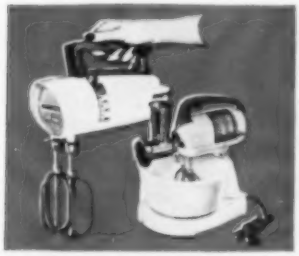
President C. R. Heagstedt and the top executives at Tousey were on hand to welcome visitors. A tour of the new plant and refreshments were the order of the day.

The plant, sparkling in newness, is to operate with almost complete automation. It was an eye opener to those present. The latest in processing equipment and material handling facilities have been installed in the 20,000-sq. ft. allotted to manufacturing and shipping. The company expects to employ about 50 people when in full operation.

This new addition to Tousey will manufacture 1,000,000 gallons of paint per year, this amount being based on two 8-hour shifts a day.

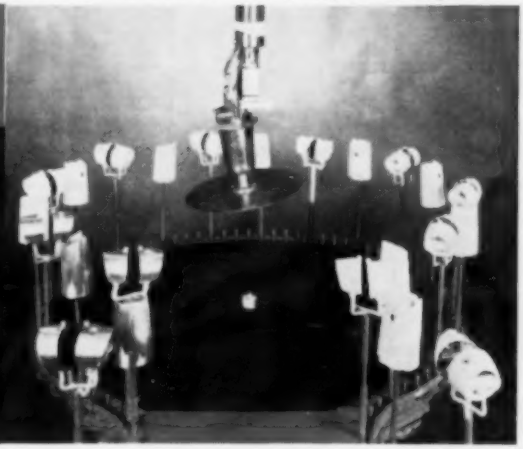
The East Moline location allows Tousey to better service the large industrial and agricultural manufacturers in Western Illinois, Iowa, Nebraska and Missouri.

The new Quad Cities Division plant of Tousey Varnish Co. recently opened at East Moline, Ill.



DORMEYER MIXERS are painted with RANSBURG NO. 2 PROCESS

. . . and high quality standards are easily maintained with Electrostatic Spray Painting



Aluminum and zinc die castings of the Dormeyer Mixers are painted uniformly as the parts make a loop around the RANSBURG disk in the job painting plant of Enameled Steel & Sign Co.

● Enameled Steel & Sign Co. is able to serve many customers like Dormeyer, for their Chicago job painting plant is equipped with modern and efficient finishing facilities for producing high quality, high volume painting.

Electrostatic spray painting has practically replaced all other methods here, for the flexibility and near 100% efficiency of the Ransburg No. 2 Process enables Enameled Steel to serve many manufacturers of a wide variety of products. And, this with a comparatively small labor crew!

Today—with Ransburg No. 2 Process—Enameled Steel is realizing more than 60% paint savings over former hand spray. Rejects have been cut to less than 1%, for the Ransburg No. 2 Process applies a uniform, high quality finish never before obtainable with old-fashioned painting methods.

THINK OF WHAT 60% PAINT SAVINGS WOULD MEAN IN YOUR OWN FINISHING DEPARTMENT

Whatever you manufacture, if your production justifies conveyorized painting, you should look into the savings and improved quality which can be yours with Ransburg Electro-Spray. Let us tell you about the complete Ransburg services, including the test painting of your products in our laboratories.

Ransburg ELECTRO-COATING CORP.
Indianapolis 7, Indiana

RANSBURG

Allied Research & Wagner Bros. Merge Operations

As part of a general expansion program aimed at providing a more complete service and broader product development for the metal finishing industry, Allied Research Products, Inc., of Baltimore and Wagner Brothers, Inc., of Detroit have merged their operations.

This move was accomplished by Allied's acquiring the metal finishing operational assets and products of Wagner Brothers. Included in the transaction was the sale of some of Allied's common stock to Wagner Brothers, Inc. Wagner Brothers, Inc. is now divorced from the metal finishing field but will continue to operate its subsidiary, Automatic Molding Machine Co., Inc.

New Finishing Machine to Be Shown at Chicago Fair in Aug.

The first formal trade showing in this country of a unique new high-speed finishing machine, made in Switzerland, will be held at the 1958 NAFM Supply, Equipment & Fabric Fair in Chicago, August 24-27. Made by the Ulrich Steinemann Co. of St. Gallen, Switzerland, the new machine features a "Pressure Curtain Application," claimed to be an entirely new principle in finishing. Material is neither sprayed nor rolled nor flowed on. The stock being finished passes through a uniformly thin curtain of material being forced under pressure through a finely-machined and adjustable slot. It is designed to apply one or two component polyesters, vinyls, epoxy resins and other finishes, in addition to lacquers and paints.

"Ind. Finishing & Common Sense" E. A. Zahn's New Book

You will want to read and often refer to this new book by Eddie Zahn if you have anything to do with the materials, processes or equipment used in applying protective and decorative coatings to manufactured products. Ideas, suggestions and information revealed by Mr. Zahn are based upon 29 years of active experience and association with leading manufacturers and important personnel in industries that use various types of finishing materials and finishing equipment.

Among the 18 chapters in this 344-page book, we find: Selecting the Application Method, Specifications for Equipment, Process Costs, Paint Performance, Paint Material Cost, Testing Paint Materials, Surface Preparation, Film Thickness, Process Safety, Solvents and Reformulation, Paint User Management, The Future of Industrial Paints, etc.

Mr. Zahn has written many articles on finishing and is the author of two other popular and informative books—"Flow Coating" and "Paint Evaluation."

This new book is securely bound in stiff covers 5½x8-in. Its color is black and red, lettered in gold. Copies can be purchased from Industrial Finishing Magazine; price $9.00.

Lyon Metal Looks For New Products

Harvey G. Knuth has been appointed manager of the New Product Research Department of Lyon Metal Products, with headquarters at Aurora, Illinois. Mr. Knuth will handle all phases of searching for new product additions, and wherever necessary to diversify and acquire new products, the possible acquisition of new companies.

Lyon has consistently pushed a program of developing new products which can be sold nationally through their own field and dealer organization.

A special effort will also be made by Mr. Knuth to locate contract items which the company can manufacture to the specifications of other concerns.

K & B Dust Collectors

New Type "M" Unit Dust Collectors are announced by The Kirk & Blum Mfg. Co., 3100 Forrer St., Cincinnati, Ohio. Although three model sizes are available, the largest unit is only 26x40x72½-in. This unusual compactness is achieved by careful placement of equipment within the rigid, durable enclosure.

NAFM Fair in Chicago, Aug. 24

The National Association of Furniture Manufacturers will hold a Supply, Equipment & Fabric Fair at the Conrad Hilton Hotel in Chicago August 24 to 27.

The Fair is designed to let furniture and woodworking executives see the latest supplies, machinery, equipment and services available to help improve quality, increase production and lower costs.

Modern Facilities Will Produce....

LINDEMAN 50 YEARS SPECIALISTS IN WOOD FINISHING MATERIALS

7,400 Sq. Ft., New Research and Formulation Laboratory in Galax, Va.

FINE WOOD FINISHES

LINDEMAN has the experience and the facilities, plus a fifty-year reputation, to manufacture superior finishing materials for wood and allied wood products. Permit our salesmen and Technicians to help solve your finishing problems.

Courteous Cooperation ***Quality Materials***
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LINDEMAN

Wood Finish Company, Inc.

Indianapolis 6, Ind. Galax, Va.

Modern Organic Coatings; What is in Them, and Why

By Phil Grossman
Midwestern Color Works*

MORE ADVANCEMENT in protective and decorative coating technology has been made during the last 25 years or so than in all the previous history of paint usage.

In previous years, paints were based on raw materials provided readily by nature, that is, vegetable oils, natural occurring gums and resins, and pigments which were produced from available ores. The need for more durable and faster drying coatings to meet the demand of mass production methods prompted the discovery of many synthetic raw materials for the coating industry. Then, during World War II, the strict requirements of finishes for the Armed Services speeded the development of these new synthetic materials.

An Organic Coating . . . . Pigment Plus Vehicle

Now, what exactly is an organic coating? An organic coating, very broadly, is a suspension of one or more solid materials (pigments) in an organic film-forming liquid (vehicle). Of course, there are clear coatings which do not contain pigments, but at this time we will consider only pigmented finishes.

*Minneapolis, Minnesota.

It is easy for most of us to assume that paint is paint and red is red; therefore, red paint is red paint. Of course, this is certainly not the case. If we examine two cans of red paint, let us say, we can easily recognize that they are both red, but beyond this, the similarity may end. Despite the fact that each paint may contain from two to twelve different raw materials, or even more, there may not be even one material which is common to both paints.

Alkyds; Epoxies; Vinyls; Cellulose Nitrate; Silicones

The alkyd resins are considered the backbone of the industrial coatings industry. Most air-dry and baking coatings are based on alkyds or alkyds modified with some of the other resins shown in the accompanying table. In the group of alkyd resins there are oxidizing alkyds and non-oxidizing alkyds; there are pure alkyds and modified alkyds; there are alkyds modified with linseed oil, castor oil, tung oil, or fish oil; there are phthalic anhydride alkyds and iso-phthalic anhydride alkyds, and there are glycerine alkyds and pentaerythritol alkyds. Similar variations exist in each group of raw materials.

The epoxy resins are used primarily where severe exposure to various chemicals and solvents or mechanical abrasion will be encountered.

The vinyl resins provide fast drying coatings where chemical resistance and water resistance are required, for example, in the marine coatings.

One of the cellulosic resins, cellulose nitrate, is the basic constituent of lacquers which have been protecting and beautifying many of our automobiles for a number of years.

Silicone resins are used primarily where resistance to high temperatures is required, for example, on mufflers and smoke stacks.

Water-reducible resins, of course, are emulsions. These are gaining in popularity, particularly where the use of flammable organic solvents has to be avoided.

Plasticizers and Driers; Pigments in Great Variety

Plasticizers are chemicals (and there are dozens of them) which are used to increase the flexibility of certain coatings. [*To page 34*]

CONSTITUENTS OF ORGANIC COATINGS

I. Vehicle (Liquid)

A. RESINS
1. Alkyd Resins
2. Epoxy Resins
3. Vinyl Resins
4. Cellulosic Resins
5. Silicone Resins
6. Acrylic Resins
7. Rubber Resins
8. Amino Resins
9. Phenolic Resins
10. Water-reducible Resins

B. OILS
1. Vegetable
2. Marine

C. PLASTICIZERS

D. DRIERS

E. SOLVENTS
1. Coal Tar
2. Petroleum
3. Esters
4. Alcohols
5. Ethers
6. Ketones
7. Water

F. ADDITIVES
1. Dispersion Aids
2. Flow Control Agents
3. Viscosity Control Agents
4. Anti-settling Agents
5. Anti-skinning Agents

II. Pigments (Solid)

A. PRIME COLORING PIGMENTS (Organic and Inorganic)

B. ANTI-CORROSION PIGMENTS

C. INERT PIGMENTS

Driers are organic salts of certain metals (primarily cobalt, lead, and manganese) used to accelerate the drying of alkyds and oils.

The additives are chemicals which are used in small amounts to provide the special effects listed in the accompanying table.

Of the pigments, the inorganic pigments are usually the most light-fast and durable; however, new organic pigments such as the phthalocyanines and the vat-dye pigments have made possible the beautiful pastel colors that decorate our automobiles and homes.

Three of the most important anti-corrosion pigments are red lead (which is the bright orange color you see frequently on structural steel), zinc chromate (which is included in most of the modern Federal and Military specifications for corrosion-resistant coatings) and zinc dust.

Inert pigments are inexpensive, colorless pigments which were formerly used merely to extend the volume of a paint, thereby lowering its cost. It has been found, however, that many of these pigments contribute special properties to a coating such as improved washability, re-enforcement of film strength, and certain gloss characteristics.

When you consider the great variety of raw materials in the accompanying table, which is only a partial list, and when you consider that each item is the name of only a general group of chemicals and that each group contains several variations, and when you consider, still further, that many of these items can be combined with each other in infinite proportions, then you can begin to appreciate the wonderful tools that the coatings chemist has to work with. You can also realize the tremendous task that confronts the formulator in his efforts to develop the best possible coating to do a specific job.

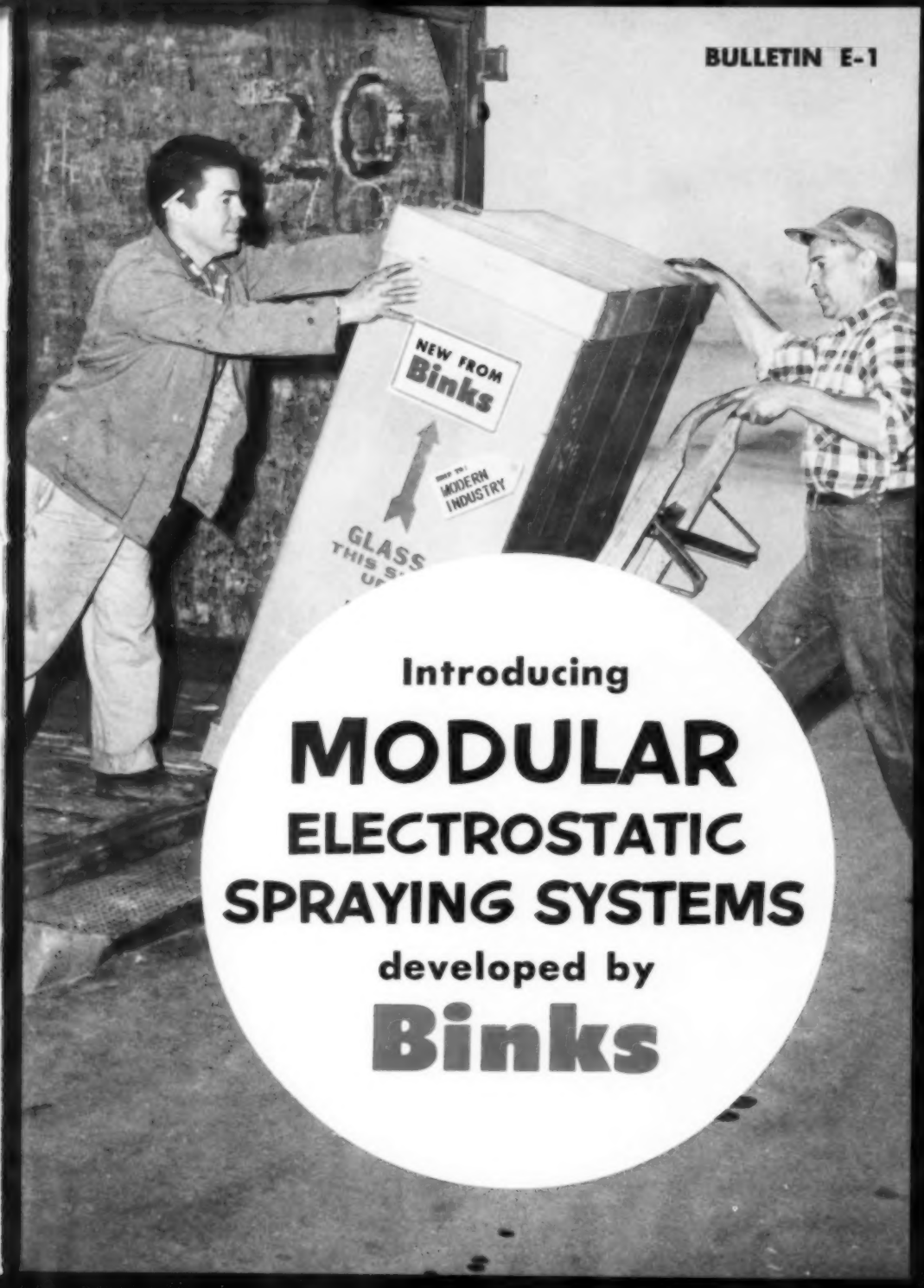
In addition to the many remarkable developments in raw materials, there have been several new types of finishes developed.

Many of you are familiar with the coating which is so common on new typewriters and other office machines and on many laboratory instruments. This finish is appropriately called wrinkle finish.

More recently, chemists have developed the hammer finish, the leatherette finish, and most amazing of all, the polka-dot (multicolor) finish. These finishes provide a very pleasing appearance, but also of importance is the fact that these textured coatings allow the use of materials of construction which otherwise might not be suitable because of scratches, blemishes, die marks, pits, or any other surface defects.

You have seen, then, how thin films formed from liquid organic coatings may allow the use of ordinary materials of construction in place of expensive alloys or other premium quality materials. Also, you have seen how special coatings allow the use of materials which otherwise might be considered substandard from an appearance standpoint, and, finally, you may now have a greater appreciation for the role of paints and other organic coatings in making our lives more interesting and certainly more colorful. [END]

BULLETIN E-1



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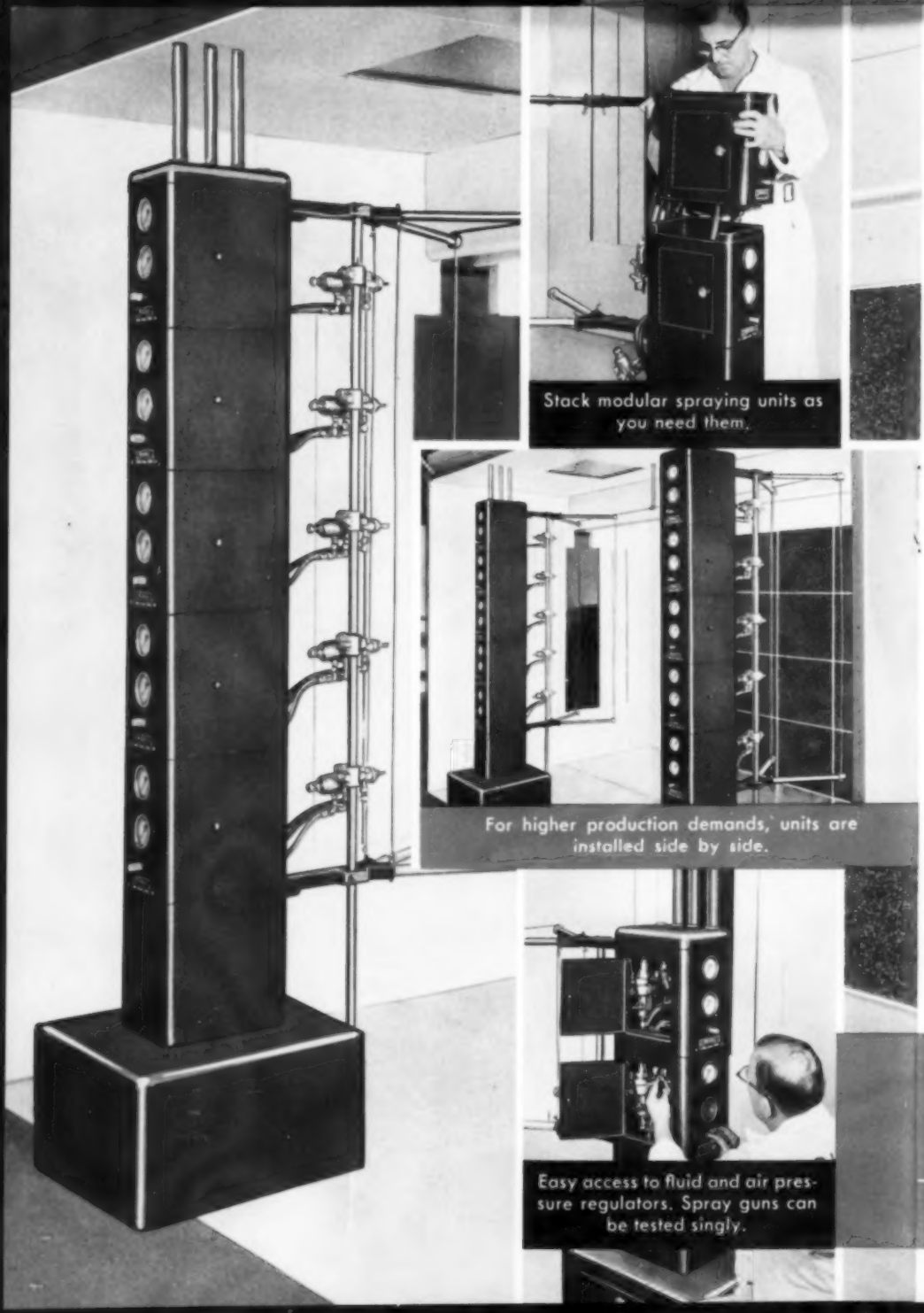
MODULAR ELECTROSTATIC SPRAYING SYSTEMS

developed by

Binks



Stack modular spraying units as you need them.

For higher production demands, units are installed side by side.

Easy access to fluid and air pressure regulators. Spray guns can be tested singly.

Binks Modular Electrostatic Spraying Systems

FIT YOUR PRESENT FINISHING LINE WITHOUT COSTLY ALTERATION

Binks-developed Electrostatic Spraying Systems fit your present finishing line without expensive spray booth alteration or replacement. Spraying units are MODULAR, self-contained equipment packages. You start with just the units you need—add or subtract units as production requirements change.

These features can reduce your finishing costs

1. **Increased coverage per gallon of finish.** Overspray is reduced. Finishing efficiency is increased.

2. **Fewer finishing rejects.** Attraction of finishing materials to your product insures unusual coverage uniformity—even for odd shapes.

3. **Drastic reduction in spray booth clean-up.** Finishing materials go on the product—not on the spray booth and exhaust system.

4. **Low first cost on equipment.** Modular, self-contained spraying units permit custom installations without special engineering.

5. **Easy installation.** After assembly, simple air, fluid and power connections put you in business. Electrostatic grid is a part of the modular package—requires no attachment to the spray booth.

6. **Fast easy maintenance.** Entire system easily removed from spray booth as a unit for clean-up. All parts are standard for prompt maintenance or replacement.

COMPLETE STORY GIVES YOU MANY MORE COST-SAVING ADVANTAGES

Contact your nearest Binks Branch Office, Binks representative or industrial distributor. Learn how Binks Electrostatic Spraying Systems can save you time, finishing materials and money—plus the many unique installation, operation and maintenance features which make these units quickly adaptable to your present system.

Ask about our spray painting school.
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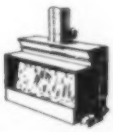
EVERYTHING FOR SPRAY PAINTING

SPRAY GUNS



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While Binks Electrostatic Spraying Systems are the one best answer for many finishing applications, they are by no means a universal solution.

Because Binks makes a complete line of both standard and electrostatic spraying equipment, you can be sure of truly objective analysis and engineering help on your finishing problems.

Binks research department will, without cost or obligation, test-finish *your* products using both standard and electrostatic techniques. You will receive a detailed report showing the costs and production rates you can anticipate. As a further service, Binks also operates a tuition-free school to train finishing department personnel in all phases of equipment operation.

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Random Comment on the Industrial Scene

(Continued from page 6)

Aluminum foil, primarily used in packaging was one of the few aluminum products which increased its shipments in 1957 over the previous year.

Current emphasis has been placed by most can manufacturers on cans for food and beverages. Aluminum cans are lighter in weight than steel cans. Alcoa is developing an aluminum foil and paperboard combination as a substitute for steel cans for fruit juices and other food products. They will be less expensive and lighter in shipping weight.

* * *

A Synthetic Rubber called Viton has been developed by DuPont. It is a new fluorine containing elastomer which has excellent resistance to oils, fuels and solvents at heat above 400° F.

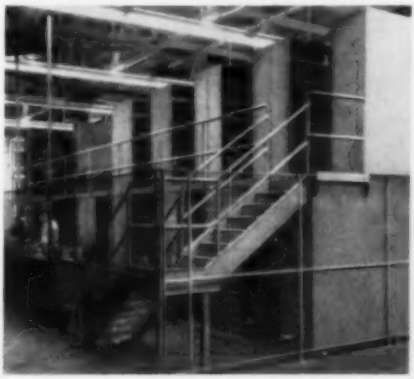
Much demand for this rubber is for use in military jet planes and missiles. Important non-military uses include aircraft seals, hose, protective clothing, fuel cells, wire insulation, caulking and paint. Because temperatures are increasing in commercial engines, it can be used for transmissions, brakes, instruments, pumps and valve stem seals.

* * *

Plating Without Current. A process for nickel plating magnesium as well as other metals has been developed by the Dow Chemical Co., Midland, Mich. No electric current is used. The nickel coating can be built up to any desired thickness. Because the process involves a catalytic reaction on the surface of the metal wherever it comes in contact with the nickel solution, the coating fills imperfections. The coating contains 7% to 9% phosphorus, therefore it becomes an age-hardening alloy with increased abrasion resistance.

* * *

Save Floor Space; Move Up. If you are short on floor space and if you have sufficient ceiling height in the stock room or tool room, why not double deck the area to provide double storage?



Save floor space by this double decking.

Steel shelving sections and the specially developed mezzanine splicers and floor support brackets will provide the needed space without encroaching on active production floor space.—Lyon Metal Products, Inc., Aurora, Illinois.

NW. Chemical Adds Two Men

Northwest Chemical Co., Detroit, Mich., manufacturer of specialized metal cleaning compounds, announces the appointment of two new regional representatives.

Norman P. Rowan is now in charge of the Youngstown, Ohio and Pittsburgh, Pa. areas, with headquarters at 462 Ewing Road, Youngstown 12, Ohio.

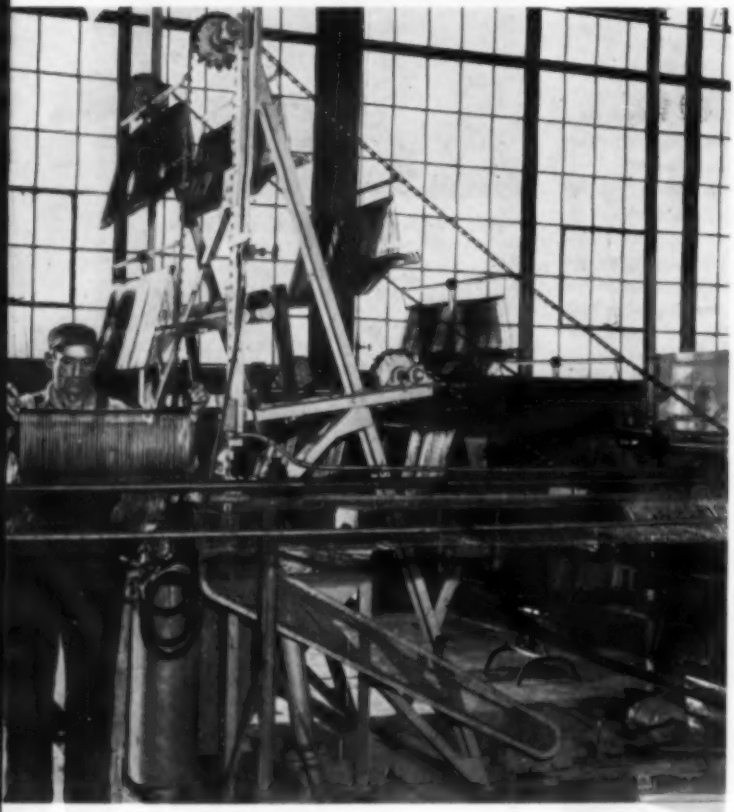
Richard B. Chalker will represent the company in the Chicago area.

Forming and Painting Wire Garment Hangers

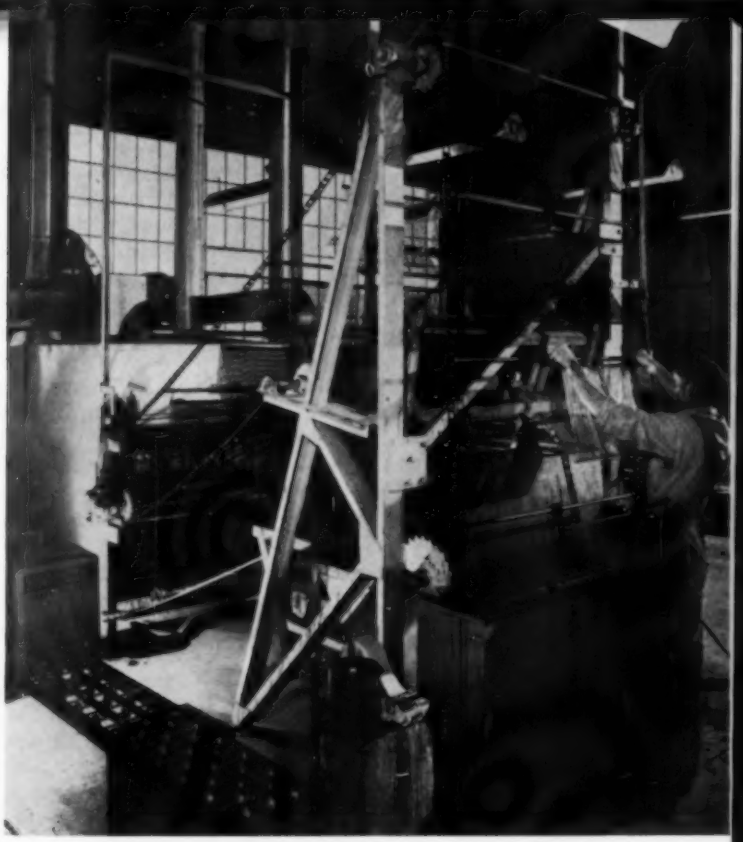
By Chas. R. Brown, Paint Specialist

WIRE garment hangers—not to be confused with wooden and plastic coat hangers—are manufactured of 13-gauge steel wire of a special alloy. The use of lighter wire results in a flimsy and inferior product.

The finish must be hard, flexible and completely resistant to the fumes or vapors of the several solvents used by dry cleaners, therefore baking enamels are used. While it is possible to make such a baking enamel in almost any color, it is not so practical to turn out garment hangers finished in a variety of colors. This is a completely automatic and mechanized operation, and to change from one color to another would involve a change-



Formed hangers are spaced and moved (right to left) by a rotating shaft which has spiral grooves. Operator picks up a rack of hangers and hangs them on a cross bar conveyor which carries them down and through a tank of enamel, then up and through an oven.



At right you see the loading and unloading station above dipping tank. At left you see entrance and exit at same end of oven. The cross bar conveyor moves at 35-in. per minute.

over of the tank—a costly procedure and only justified if there is a long run of work involved. The color chiefly used is a gloss black, although a clear gloss amber is also used.

Wire garment hangers are expendable; they are "throw aways"; however some cleaners do endeavor to get them back from their good customers so they can use them over again.

The E. H. Edwards Co. of South San Francisco, California, produces in excess of 50,000 of these hangers during each 8-hour shift. Theoretically the maximum production is some 62,000 hangers, but practically 50,000 is an acceptable number.

50,000 Hangers a Day; Only Two Men; One More Assists

It is interesting to note that due to the automatic machines and conveyors, and the specially designed racks, only two operators (not necessarily skilled) are needed to attain this production figure. However, this rather crowds the two men, so a third man attends to the machinery and assists the two men in production. Before embarking on this enterprise the whole process was engineered and a separate fireproof building 40x50-ft. was added to the firm's existing plant.

The following machinery is used: Wire straighteners with cut-off attachment; forming or bending ma-

chines to bend and twist the wire to the correct shape and size; a shaft conveyor to deliver and space the unpainted garment hangers to the next stage; a dip tank with an agitator; a conveyor to dip and move the painted work through the painting and baking phase of the process; a baking oven; and finally miscellaneous racks on which or in which to store unpainted hangers; a scale to count the finished work by weight, and a gravity conveyor and pallets for the storage of filled cartons holding precisely 500 completely finished garment hangers.

Glossy Black Baked Enamel; Viscosity is Carefully Checked

Before detailing the successive steps in this operation, just a brief word about the baking enamel and the oven. The material is customarily a gloss black or a clear amber gloss, although it might well be of any desired color and luster. In this installation an oleoresinous baking material is used; it is thinned with Socal 1*, so as to bring the viscosity to 13 seconds, as measured in a No. 4 Ford cup at room temperature (about 70° F.).

Tests are made four times during each shift to keep this material at the desired viscosity. In practice the operator can tell quite closely if the viscosity is right by observing the run-off; and he can also tell, by visual inspection, if the hiding power of the material is adequate.

As a precaution the supplier of enamel takes a liquid sample from the dipping tank avery two weeks; this sample is completely and carefully checked by the general laboratory. This precaution forestalls trouble.

The oven is maintained at 375° F. by automatic controls. An automatic CO_2 fire extinguisher is installed over the dip tank; the room is "sprinklered" and the "No Smoking" rule is rigidly enforced.

Operator places cut lengths of wire into hopper and the machine automatically bends and twists the wire to make the completed hangers which drop down on a convenient rack below.

Straightening; Forming; Spacing on Conveyor

Mechanically the procedure is this: Wire from coils is fed through a wire straightener and cut off in 42⅝-in. lengths. These

*This is an aromatic type petroleum solvent put out by the Standard Oil Co. of Calif. (hence S O Cal.). Any of the oil companies or manufacturers of thinners will have no difficulty in duplicating it, as they all must have comparative tables of the solvents made by the different companies.—Author.

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All the tough jobs are covered by Oakite's booklet on *"Cleaning and preparing metal in aircraft production"*. Just check this list of contents for reminders of operations that give you trouble:

	SEE PAGES
☐ Cleaning aluminum (with or without etching)	2
☐ Preparing aluminum for welding	3
☐ ChromiCoating aluminum before painting	4
☐ Stripping paint from aluminum, steel	5, 9
☐ Barrel finishing aluminum, steel, copper	5, 9, 11
☐ Cleaning magnesium	6
☐ Cleaning steel; derusting and descaling	7
☐ Preventing rust	8
☐ One-operation preparation for painting	9
☐ CrysCoating steel before painting	10
☐ Cleaning copper and its alloys	11
☐ Controlling water in paint spray booths	12

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cut lengths are placed in the hopper of a bending machine. This machine is especially designed for this particular use; there are only four bending operations.

Probably the most interesting part of the machine is twisting the wires together just below the hook in the hanger. This is accomplished by a sleeve that passes over the two ends of the wire and then makes one complete revolution as it is withdrawn. The two ends are thus tightly twisted together. Each of these bending machines—there are four of them at this installation—has an output of 40 finished hangers per minute. The completed hangers fall out onto two curved rods and are ready for painting.

Be it noted here that only the first operator has been employed up to this point and the next step. As soon as he removes the hangers from the bending machine he places them on a revolving shaft 1½-in. in diameter by 29-ft. long and slightly lower at one end. The upper section of this shaft is smooth but its lower section has a worm groove. Hangers work themselves down the smooth part of the shaft by gravity and then move into the groove and are thereby spaced exactly ⅜-in. apart.

Hanging Them on Cross Bar Conveyor; Painting; Baking

We now come to the painting and baking phase which is performed by the second operator. The garment hangers are removed, 58 at a time, by means of a special rack and hung on the chain conveyor. This conveyor lowers the hangers into the dip tank, then moves them upward and out of the enamel; the dip-coated wire hangers move horizontally into the lower part of the bake oven, clear to the back, then they move upward and back through the upper section of the oven and back to their starting point.

The second operator removes the painted and baked garment hangers and packs them into corrugated cartons; he also loads the conveyor and the cycle is repeated. Painted wire hangers are counted by weight, the cartons are sealed, placed on a gravity conveyor and run to the storage area where they are placed on pallets. It might be noted that the elapsed time from leaving the dip tank to entry into the oven is the "stand-off time," seven minutes; time in the oven is the "baking time," three minutes; and the seven minutes between leaving the oven and unloading is the "curing time." The accompanying photographs show various stages of this operation.

Conveyor Holds 3800 Hangers; Travels 35-in. per Minute

The conveyor consists of two parallel chains 51-in. apart and connected by steel rods spaced 21½-in. apart. There are 35 of these cross rods in the conveyor and each rod accommodates two racks positioned end to end. Fully loaded, the conveyor holds in excess of 3800 garment hangers, traveling 35-in. per minute. The dip tank holds from 135 to 150 gallons of enamel—and, as mentioned previously, it has the protection of an automatic CO_2 fire extinguisher.

The routine of the second operator is this: He removes garment

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hangers from the worm shaft and places the rack on the conveyor. The work moves down into the dip tank and is withdrawn at a 60° angle—all by power drive. It moves down gradually to the level of the lower part of the oven; moves into and through the lower half of the oven to the back, then up and out through the upper section, and back to the point of origin.

Due to the slow rate of travel of the conveyor there is practically no dripping after hangers leave the dip tank. The second operator loads and unloads the conveyor, packs the hangers in cartons, seals the cartons and places the cartons on a gravity roller conveyor.

Why it Operates so Smoothly, Efficiently and Trouble Free

Due to the preliminary engineering and research on the part of E. H. Edwards Co., and the development work done by the supplier of the enamel, plus close inspection and checking on the part of both, there has been remarkably little trouble with this installation.

At times it has been necessary to run this plant on two shifs, although usually one shift is sufficient. This plant uses four bending machines, four straighteners and several storage racks for unpainted hangers, all of which provides reserve equipment for emergency use and for providing an accumulation of unpainted hangers so that the operation is continuous and a regular flow of work is assured at all times.

Eight out of ten accidents result from unsafe acts by an employe.

A. A. Emond, Tech. Rep. for S-W on Pacific Coast

Alfred A. Emond has been appointed Technical Representative for the Pacific Coast Industrial Zone of The Sherwin-Williams Co. of California. He will be selling industrial finishes out of the Portland, Oregon, area.

Having had production and formulating experience in the printing ink field before joining S-W, he soon became General Industrial Group Leader at the Oakland laboratory. He has held this position for the past 11 years. For three years, he has been Assistant Technical Director at Oakland.

R. Sadwith Joins I.W.M. Co.

The Industrial Washing Machine Corp., Matawan, N. J., announces the appointment of Mr. Ryan Sadwith as Secretary and General Manager.

Mr. Sadwith formerly held executive positions with two other well known manufacturers.

Industrial Washing Machine Corp., manufacturers metal cleaning and processing machinery, paint bake ovens, and spray booths.

Sklarz, Eastern Man for ADM Co.

Appointment of Everett Sklarz, New York, as eastern regional resin sales supervisor for Archer-Daniels-Midland Co. was announced by W. C. Mueller, sales manager for ADM's resin and plastics division.

Sklarz, a technical sales representative for ADM in New York since 1948, will supervise resins sales in the territories covered by ADM's New York, Cambridge, Philadelphia and Baltimore sales offices.

Ross Builds Chicago Office

The J. O. Ross Engineering Division of Midland-Ross Corp. is putting up a new suburban Chicago Office building. It is expected to be completed this fall, will have floor space of about 12,500-sq.ft. and will include facilities for Chicago personnel of the John Waldron Corp., and for the recently acquired Hartig Extruder Division, both of which operate as part of the J. O. Ross Engineering Division.

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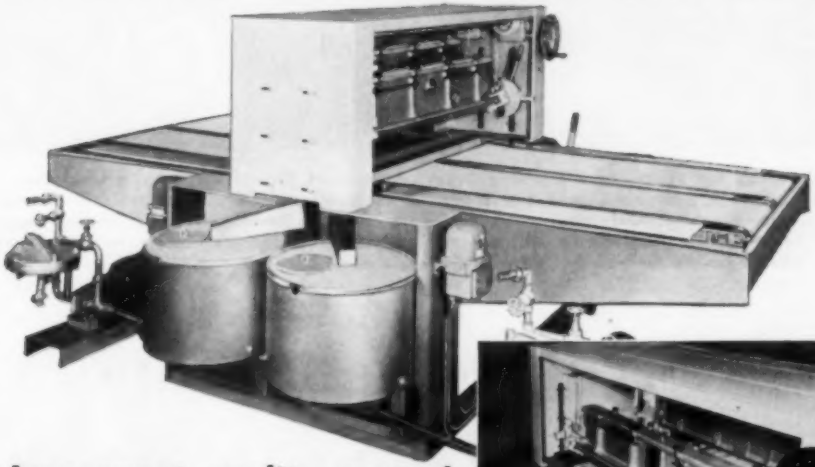

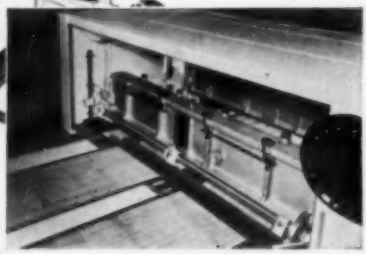

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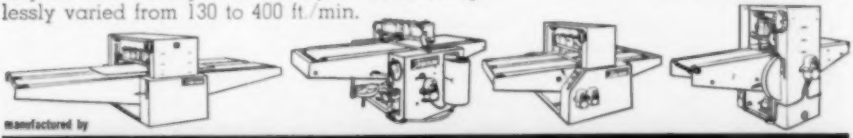

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GEORGE KOCH SONS, INC. Evansville 4, Indiana

That wall fan above the dip tank will remove some of the solvent vapor arising from the paint in the tank, but it will also speed up evaporation of needed solvents in the paint, and more solvent will have to be added to maintain correct viscosity. Also, the one exhaust fan in this location will not remove solvent vapor that comes from dip-coated products moving far to the right over the drain pan.

Control Solvent Vapors and Put Them to Work

BY P. C. BARDIN
Associate Editor

DIP COATING set-ups, from which solvent vapors arise, vary in different factories. In some plants you see a conveyorized dipping installation where a "dip" in the overhead conveyor line allows the suspended products to move down into and up from a tank containing paint or other coating material. In other cases racks of parts to be coated are lowered straight down (manually or by power) into a tank of coating material.

Regardless of which type of dip coating set-up is in service, or which kind may be contemplated, there is one vitally important factor to consider; it is those ever-present solvent vapors which escape from the dip tank and from freshly coated parts leaving the tank. What means, if any, is provided for the safe removal of these vapors?

Solvent vapors, being heavier than air, settle to the floor. If the volume of escaping vapor is allowed to continually increase, because of

Solvent vapors from dip coating tanks can cause inconvenience, discomfort and actual danger if uncontrolled, but if properly directed into a compartment in which excess paint drains off coated surfaces, they can be very useful; they can prevent the formation of sags and clinging tear drops of paint on the work.

an improper, inadequate or non-existant exhaust system, the vapors will accumulate to the point where they almost fill the room. Then you have a dangerous condition, both from the standpoint of health and as a fire hazard.

Where to Put Exhaust Fan; Clean Replacement Air

Suppose an exhaust fan is to be installed. Where do you put it? Let us see what happens if or when the exhaust fan is located close to the ceiling of the room. A movement of air will be along the path of least resistance. Air in the upper part of the room will be exhausted first. To pull out the solvent vapors which are so heavily concentrated close to the floor, you would have to change all of the air in the room. What is exhausted must be promptly and continuously

Here is a dip tank with its upper part enclosed (side door is lifted to show the loaded conveyor) and with its exit (at left) adjoining an enclosed draining area wherein the presence of controlled solvent vapor helps to produce a clean dip coating job, with no sags or clinging paint tear drops hanging to the under edges of coated products.

replaced. If the replacement air is not cleaned by coming in through filters, all kinds of dust and flying particles may be drawn into the room and settle on the freshly coated surfaces of products that have been dip coated. And, during the winter, unless the replacement air is also heated before it enters the room, you will be cooling the finishing room instead of heating it.

Inflammable Vapors Are Doubly Dangerous

Aside from the harm that employees may experience from inhaling these solvent vapors, any concentration of inflammable vapors, within a factory area is dangerous from the standpoint of fire. A concentration of solvent vapors hovering close to the floor could easily be ignited by a spark of static electricity or by any spark set off by metal striking metal or metal striking concrete. Naturally, therefore, it is important to either prevent solvent vapors from entering the room or change all of the air in the entire room at least once every five minutes.

One or more exhaust fans, operating above the dip tank, will remove solvent vapors from the tank but not from the wet coated products that are moving away over the drain pans. And these over-the-tank fans will do something that isn't so desirable. They will accelerate the rate of evaporation of solvents from the paint material in the dip tank—and more solvent will have to be added and stirred into the material to maintain its required viscosity.

Exhaust ducts located at floor level will help to remove solvent vapors lying close to the floor, but it is necessary to have a suitable make-up air system to replace the air that is exhausted. As a matter of fact, a little more air should be

A dip tank, apparently with no special ventilation. If windows are opened the draft may blow solvent vapor into the room instead of removing it; and dust may blow into the room.

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pulled into the room than is pushed out, so that the room will be under slight pressure; then any draft of air through an opened door, window or other opening will move outward instead of inward.

Controlled Solvent Vapor Can Help Prevent Fat Edges

While uncontrolled solvent vapors in any painting or finishing room are likely to be a hazard to employees' health and plant safetly, they can be controlled and directed in such a way as to help produce a clean run-off of excess paint from the surfaces of dip-coated products. Here's how it is done: The dip tank is enclosed except for its entrance and exit openings; this enclosure does not have an exhaust duct. Attached to the exit end of the dip tank is a drain-off area which is also enclosed; its floor slopes towards the dip tank so that excess paint which drains off will flow back into the dip tank.

The drain enclosure (made of sheet metal) has air ducts for the controlled release of vapor-loaded air and for bringing in replacement air—fresh filtered air. This controlled ventilation must be designed to prevent any over concentration of solvent vapors in the drain enclosure. The ventilation of the drain enclosure will also take care of adequately ventilating the dip tank enclosure. Both the exhaust air ducts and the intake air ducts must be properly baffled to prevent air currents or air turbulence in the drain area. Here the volume of replacement air should be equalized with the volume of air exhausted.

Correct adjustment of the solvent vapor atmosphere in the drain area will cause the excess paint from dipping to flow rapidly and uniformly off the surface of coated products; and, happily, it leaves no runs, sags or fatty edges. Furthermore, when this excess paint drips onto the inclined floor of the drain enclosure, it remains in a liquid state and flows back into the dip tank instead of oxidizing and becoming waste, as it would on an exposed drainboard.

While the arrangement just described is desirable from a manufacturing standpoint, it is also needed to prevent solvent vapors from escaping into the dip coating room. Pressurizing the entire room is unnecessary because the coated parts are protected against dust and flying particles in the controlled atmosphere of the drain enclosure, until they enter the oven.

As a result, through the installation of the proper equipment, those solvent vapors which would otherwise cause hazardous conditions and complaints from workmen are now controlled and put to work for a useful purpose. In many cases your present open dip tanks can be enclosed and modernized by finishing engineers at a nominal cost.

EDITOR'S NOTE: Solvent vapors from certain cleaning fluids can also cause trouble in the finishing room. If these cleaning fluids are used near the entrance to an oven in which paints, finishes or enamel coatings are baked, solvent vapors may enter the oven. If they do, some puzzling and unsatisfactory results will show up—and everything but the real culprit may be blamed for it.

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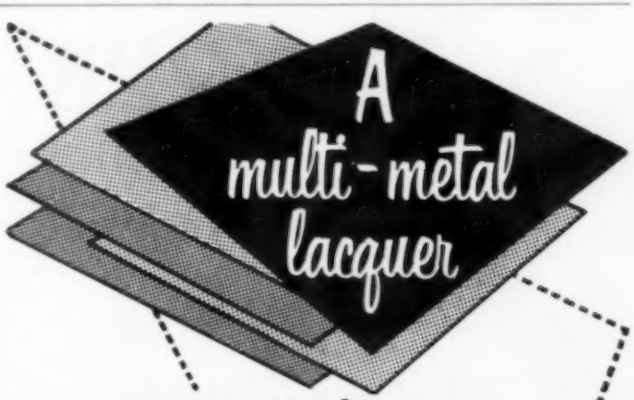
Finish Consultant Tells About His Experience

A few years ago I called on the purchasing agent of a fairly large industrial plant. I had heard that the company was having difficulties with their finishing operations. Their product was used exclusively outdoors, and was sold in territory west of the Mississippi River. This meant that the finish must withstand a variety of climatic conditions.

The purpose of my call was to see if I could assist the P.A. in a consultant capacity. I was informed by the P. A., over the telephone, that he was not interested; the sales representative of a nationally known paint manufacturing company had offered his assistance.

Now the problems existing at this plant not only called for the correct type of materials, but involved many other factors such as correct surface treatment of various grades of metal, soldering and welding spots, the baking temperature because of equipment being electrically wired, etc., before painting. The product was practically assembled before painting. It was an engineering problem as well as calling for a suitable finish material. The paint manufacturing chemist could and possibly did formulate a suitable material; however, there still remained the question of whether or not he had all of the necessary facts.

Recently I directed a letter to the president of that same company, mentioning my plan of operation and



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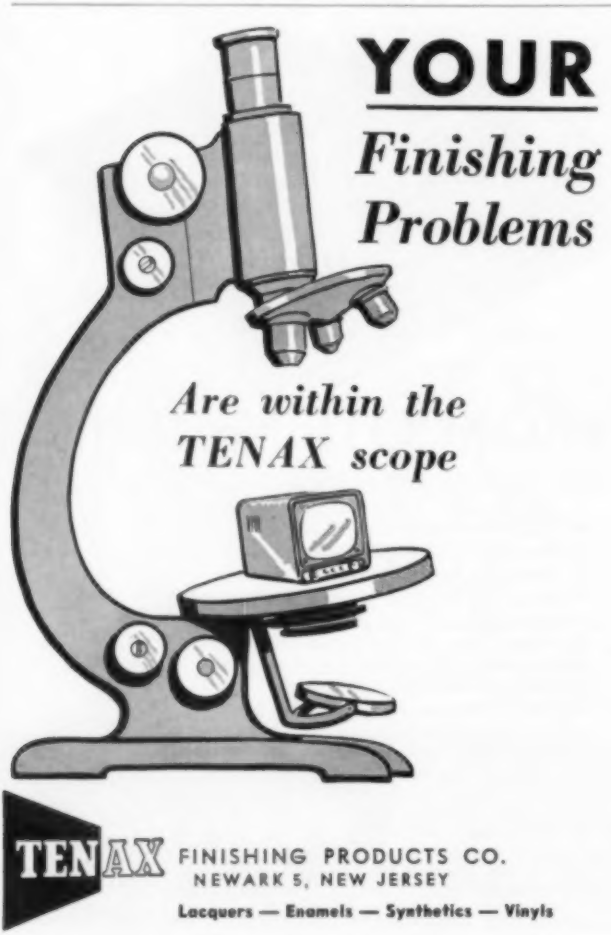
asking for an interview. In a few days I received a telephone call from one of the vice presidents, asking me to come in to see him personally. He said he had problems. During our conversation he mentioned about the P.A. getting assistance from a paint salesman, but because of lack of experience and knowledge on the part of the company employees and the paint sales representative, a serious mistake had been made.

As a result it cost the company thousands of dollars in extra labor during the past two years. Also, because of the same reason it had taken them two years to obtain materials that were entirely satisfactory. During this period it had cost thousands of dollars for repainting equipment due to paint failures. We all know that the best quality materials can produce failures unless all operations are properly controlled, from the metal preparation to the final paint baking.

Because the sales representative did not have the necessary knowledge to engineer a proposition of this size and type, and possibly because he was unable to devote the necessary time to finding out all of the facts, some critical mistakes were made. Also delays occurred in submitting the right type of materials and the new procedures to be used.

I was told by this V.P. that because of the situation experienced in the past, as related above, the management now was reluctant to make any change in materials. They were not so sure that any better quality materials were available.



At the time of my more recent visit I had with me a finished panel of Epon resin formulation material which had been placed under all required test procedures. It interested the V. P. so much that he asked me to have a paint manufacturer make up a production sample to be delivered and marked for his attention.

Uufortunately one of the mistakes that was made cannot be corrected without excessive additional cost. An operation was omitted which required equipment, and at this time, because of the present layout, there is no available floor space or overhead room where it can be placed on the production line. However, plans are on the way to correct the mistake, and by using the new formulated material recommended, both material and labor costs will be reduced, while at the same time providing a more durable outside finish.

During a call at another plant I was allowed to make a preliminary survey of a finishing department. Here the trouble was complaints from customers and the firm's sales manager. Poor adhesion, chipping, poor hiding power, and poor application. I reported several incorrect procedures which I found being used, including the wrong type of enamel.

Here the paint salesman was endeavoring to correct the material by submitting new samples and bringing in a finished part prepared in the paint manufacturer's laboratory. Now we all know that in a laboratory a sample part can be finished beautifully—but can it be duplicated on the production line at the customer's plant? Consideration must be given as to what metal treatment the product is to receive, how efficiently the material will be mixed and applied, the baking time and heat to be used at the plant. The material must be formulated to meet their equipment facilities, together with their produc-

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tion setup. This requires a complete understanding of the firm's equipment and production system—and the fabricating operations if painted before fabrication—together with the end use of the product.

In this case corrective procedures were placed in operation, new samples of materials were formulated to meet specifications and requirements which provided the customer with a quality finish—eliminating complaints.

The point I wish to bring out is, wouldn't it be better, in many cases, for the paint sales representative to suggest that his customer obtain outside consultant service? The consultant, although not connected with any paint manufacturing or equipment concern, is always willing and happy to assist them in using equipment and materials correctly.

I have been on assignments where it was necessary to spend from one week to possibly several months at a plant to place equipment in proper working condition, establish controls and standard procedures, train finishing department personnel, obtain corrective materials, etc. In many cases, where two shifts were in operation, it was necessary to spend 16 hours a day for five days a week. Now, can the average paint salesman devote this much time to one plant, and handle the rest of his customers, as well as to get new accounts? Or can any paint or finish materials company afford to have one or more of its service men spend this much time in one customer's plant? It's something to think about. — *R. Syer.*

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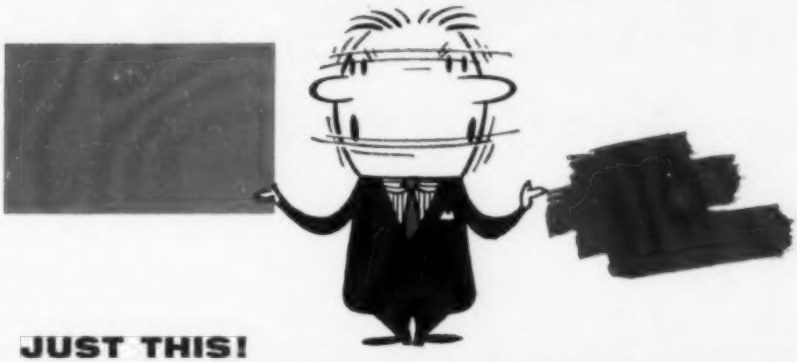

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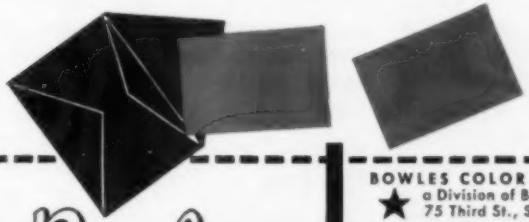

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Preparation of PARTICLE BOARD For Painting or Finishing

By P. C. BARDIN, Associate Editor

WOOD PARTICLE board, or chipboard as it is often referred to, is a composition board made of dry wood particles which have been coated with a resin binder and formed into shape by heat and pressure. The binder is usually urea or phenol-formaldehyde. Some board is produced with a homogeneous type structure while others are made of layers of dissimilar particle types known as sandwich construction.

Three Types of Chipboard; Shapes, Sizes and Uses

The three important types of chipboard produced in the United States may be designated as splinter, shavings and flake, depending on the type of wood used. Also, there are three methods of producing chipboard; by hydraulic hot-plate press, extrusion between heated plates, and a continuous pressing process.

Chipboard is produced in flat rectangular sheets, curved sheets, profile form and special shapes. The principal use of flat sheets is for wall panels, game boards, chalk board, flush doors and for core stock in plywood construction. The curved sheets are often used as core stock in the manufacture of furniture. Special shapes would include such items as small boxes, lamp bases, table model radio cabinets, etc.

The resin content in chipboard averages from 4% to 8%, and specific gravity ranges from 0.50 to 0.80. The specific gravity or density of the board denotes the compactness of the individual particles and other materials.

The surface quality of chipboard is an important consideration as it definitely determines customer acceptance of the board. Fine material will produce a more dense, compact surface; however, too much fine material tends to weaken the board through excessive resin absorption.

Surface Must be Filled for Painting or Finishing

In those cases where chipboard is to be painted or ground-coated preparatory to the transfer of wood grain or a design such as textile, marble, etc., it must be filled before paint is applied. This board con-

From left to right you see: 1) the raw or bare uncoated chipboard; 2) painted but not filled (you can see the pattern of chipboard through the paint); and 3) filled and painted so it is perfectly smooth, and of solid color like smoothly painted steel. This happens to be a mahogany ground coat for mahogany graining.

tains voids much larger than any found in wood or in some composition board classed as "hardboard." It also contains moisture control additives such as wax or heavy-bodied mineral oil which definitely influences the type of filler that may be used.

Filler material suitable for use in preparing the surface of chipboard must contain a minimum of solvents in order to keep shrinkage down to a minimum. Ordinary fillers, such as are used in filling wood, cannot be used on chipboard because certain solvents in these fillers would pick up the moisture barrier ingredients used in chipboard.

The special filler must contain a binder which will act as a barrier to the migration of moisture control additives such as wax or heavy-bodied mineral oil. If allowed to migrate, it would show through or "telegraph" the formation of the splinters, shavings or flakes through the paint or ground coat. It could cause lack of adhesion of paint or prevent or at least retard drying of the paint or ground coat.

Edges of Chipboard Require Different Type of Filler

Thus far I have discussed fillers suitable for use on the face and back of chipboard. If the edges of this board are to be painted, a different type of filler is required. The solvents used in edge filler material must be different from those used in face filler material, so that when the edges are filled and any

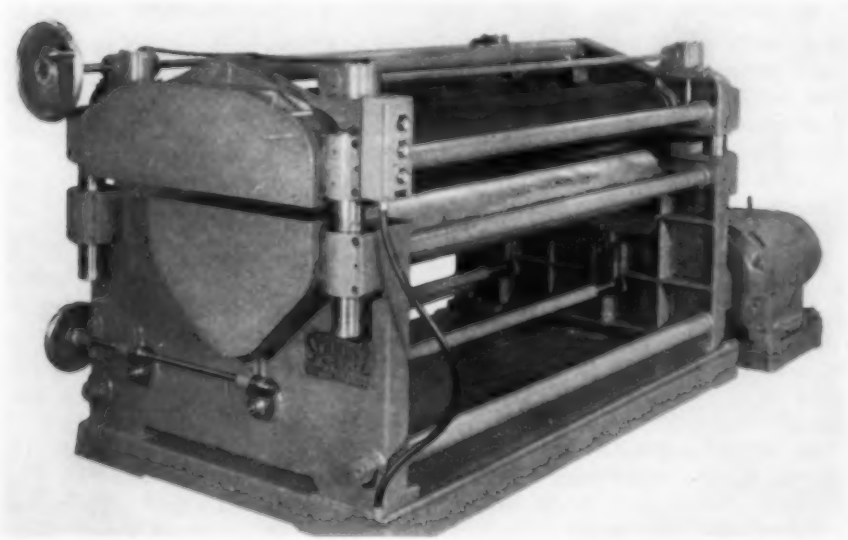
of this filler flows over or is spilled on the face surface, the solvents will not attack the face filler. Thus far the two filling operations are separate, and they will most likely remain that way. It is more economical to face-fill the chipboard in full sized sheets and then cut it into smaller units than it would be to face and edge-fill the smaller sizes in one operation.

Chipboard Filling Differs From Wood Filling

The peculiar characteristics of chipboard rule out ordinary filler application methods. The reason for filling this board might be considered in the light of a three-fold purpose. First the surface voids must be filled to produce a level smooth surface; secondly the surface must be sealed, and finally the filler must prevent the pattern of the splinters, shavings or flakes from showing through the painted surface.

Because of the relatively small amount of solvents used in the filler material, it dries far too rapidly to permit application by roller coater or by spraying and then wiping off.

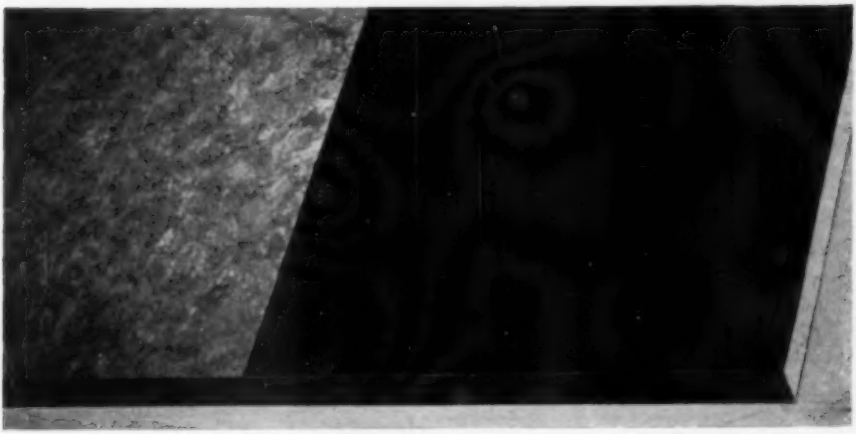
You might think that reverse roller coating would fill and level the surface, but this method is impractical because the large quantity of filler required would make it too expensive. Also, it has been found by experience that the rolling action of the reverse roller does not produce the clean, filled surface that is produced by a well balanced series of doctor blades. The first



Power feed bottom coater for filling and leveling the surface of chipboard to prepare it for painting or finishing. Photograph courtesy of Schmutz Mfg. Company, Louisville, Ky.

Project:

Development and application of special fillers for "chipboard" prior to finishing . . .



Raw Uncoated Chipboard | **Chipboard Finished— Not Filled** | **Chipboard Filled and Finished**

SOLUTION:

Reliance chemists and finish engineers working as a "team" with machinery experts and particle board producers, have solved the problem of filling "chipboard" in preparation for painting or finishing.

Development of especially formulated fillers for the fast growing particle board industry, is just *one* of the many types of projects presented to and successfully completed by Reliance laboratories.

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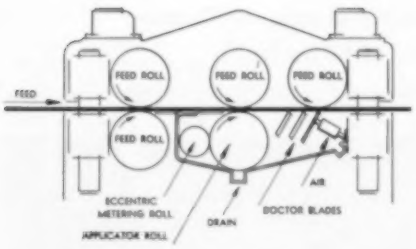


Cross sectional diagram showing essential parts in power-feed machine for applying filler to the surface of particle board. Eccentric metering roll does not revolve; it is used to adjust the amount of coating material the applicator roll carries to particle board being coated.

doctor blade, with its blunt edge, produces a padding-in action. This is followed by sharp edged blades which shear off the excess filler. The shearing action of these blades is necessary to produce a properly filled surface on chipboard.

Chipboard Filling Machine Does a Perfect Job

An ingenious machine has been developed for the application of filler to chipboard. Included in the machine are two feed rollers, two hold-down rollers, an applicator roll with *a stationary eccentric metering roll* (it doesn't revolve) by which the thickness of the filler coating can be controlled as closely as 1/32-in., and a series of three doctor blades for working the filler into the surface voids and removing excess filler material from the surface. These rollers and blades are all mounted in a heavy metal frame designed for continuous production.

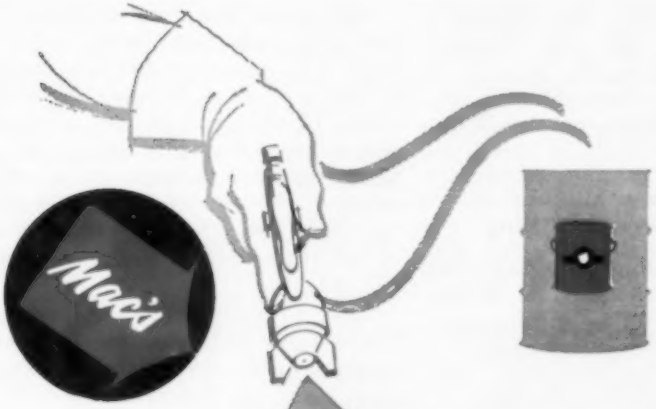
This machine will take boards as wide as 54-in. and in thicknesses ranging from ¼-in. to 4-in. It has a variable speed drive with a speed range of 8 to 32-ft. per minute. Because the type of solvents used in the filler material would attack rubber, all of the machine rollers are steel, and the face of the applicator roll is waffle-iron knurled.

Metering and Applicator Rolls; Doctor Blades, and . . . .

Because of the extremely fast drying properties of the filler material, the stationary eccentric metering roll, applicator roll and the doctor blades, together with the pan in which the applicator roll operates, are fully enclosed except where the applicator roll and the doctor blades contact the underside of the chipboard.

The first doctor blade (in back of applicator roll) has a blunt or rounded edge to produce pressing-in effect. The second doctor blade, which has a rather sharp edge, begins the removal of excess filler from the face of the board, and the third sharp edged blade completes the removal of excess filler from the face of the board. The pressure of this third blade against the surface of the board is controlled by a series of air cylinders extending across the width of the machine. These air cylinders also prevent any deflection of this blade, regardless of the pressure used. The excess filler material, removed by the doctor blades, flows directly into the enclosed pan in which the applicator roll operates for re-use.

Because of the fast drying properties of the filler material and the cleanness of the surface produced



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Mac's Satin Finish Wooling Lacquers, if steel wooled only, or if steel wooled with wax using 3/0 or 4/0 steel wool, will produce a very smooth, silky, and scratchless finish that feels more silky than the regular satin finish lacquers. The steel wooling process is inexpensive and easily done.

Mac's Satin Finish Wooling Lacquers are made in different sheens which may be a flat comparable to a 20 sheen or as bright as a 75 sheen lacquer. They may also be used without steel wooling and will produce a fuller and more homogenous finish than the regular semi-flat lacquers.

Mac's Satin Finish Wooling Lacquers are available in water white light resistant, for use on white or pastel finishes, or in the regular lacquers for the darker shades such as mahogany, walnut, etc. The water white satin finish wooling lacquers are universal lacquers and may be used on both white and medium to dark finishes wherever space for storage is important.

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by the doctor blades, the chipboard that is run through this machine may be stacked in 1½ to 2 minutes; and then returned to the infeed end for filling on the other side.

Sand After First Filling; Brush After Second Filling

For high quality finishing, the chipboard should be filled twice. After the first filling it is recommended that the filled surfaces be sanded, preferably with an automatic belt sander, using No. 4/0 sandpaper and only light pressure to produce what is commonly called "scuff sanding."

After the second and final application of filler the chipboard should be run through a power brush machine to surface brush the board. This brushing is done to remove any nibs or extraneous matter that may be on the surface.

The power brushing machine is generally equipped with one or more 7-in. diameter brushes made of either medium tampico trimmed to 1½-in. long, or 0.005-in. crimped oil-tempered steel wire 2½-in. long. These brushes extend across the width of the machine and are set "straight across" or at 90° angles to the travel of the board through the machine.

The pressure of the rotary brush against the surface of the chipboard (known as the "depression") and the rotary speed of the brushes in relation to the feet per-minute of travel of the board through the brush machine—these are variables that must be modified and established to suit each particular job.

Author's Note: Acknowledgment is made to Reliance Varnish Co., and Schmutz Mfg. Co., for some technical information used in this article.

"How to Strip Paint" Booklet

Four methods commonly used by leading industrial plants to remove paint are described in detail in a new booklet recently published by Oakite Products, Inc., 20 Rector St., New York 6, N. Y.

The booklet describes 12 different paint stripping compounds—alkaline, solvent, and solvent-acid—each designed to remove different type paints. It then discusses the Oakite Hot-Flow-On method of stripping, consisting of flowing stripping solution through a perforated pipe rake or shower-head.

The second method discussed is tank immersion, in which the part to be stripped is soaked in a tank of stripping solution.

Third is the steam gun method in which steam is combined with the stripper and flowed on the surface through a steam gun. Brushing is the fourth method: stripper is brushed on, allowed to soak and rinsed off.

For more data, circle 26 on colored card.

Aliphatic Chemicals Catalog

The chemical products division of the Archer - Daniels - Midland Co. announces publication of a new 52-page catalog for its line of aliphatic chemicals.

Requests for copies of the new ADM catalog should be addressed on company letterhead to the Chemical Products Division, Archer-Daniels-Midland Co., Box 839, Minneapolis 40, Minnesota.

For more data, circle 27 on colored card.

When to Consider The Use of Automatic Spray Equipment

An 8-page booklet covers the spray painting of parts, sub-assemblies and complete products. It discusses various shapes and sizes which can be painted automatically. For a free copy, write to Eclipse Air Brush Co., 390 Park Ave., Newark 7, New Jersey.

For more data, circle 28 on colored card.

Masking Projections For Dip or Flow Coating

SEVERAL different methods are available for masking threaded projections, knobs or projecting electrical terminals on the parts to be painted or coated in some way. Hand masking, with conventional masking materials such as pressure-sensitive tapes, etc., is tedious; it takes a lot of time and often it is not effective when the paint is applied by dipping or flow coating. Liquid paint often leaks under the edge of the mask causing rejects or rework. The rough edges, often left by pressure-sensitive masking tape, are undesirable too.

A new method of masking has been developed, and while it will not fit all applications, it does have a multitude of uses. This process is especially adaptable on such surfaces as the terminals on various manufactured assemblies commonly used in the electrical industries, such as with radio, television or other communications equipment.

A terminal surface is normally plated with silver, tinned or coated with some other electrical conducting metal and it is essential that this surface be kept clean of any paint or other coating material. Of course, some of these assemblies that have electrical terminals do not require painting at all—but it may be desirable to cover the terminals with a suitable mask for normal handling or shipping protection.

The proposed masking process involves the use of natural liquid latex

which is applied to the terminals by dipping or by brushing. This latex dies quickly and it forms a perfectly tight continuous packet around the terminal, regardless of the projecting contours. Ordinary threads can be completely covered and protected too.

The thickness of the mask can be varied by reducing the latex with ordinary household ammonia such as that purchased in a grocery store. Reductions of one part of liquid latex to four parts of ammonia have been very successful as have the full strength liquid latex solutions. As the ammonia addition is increased, the drying speed of the liquid mask is also increased. From three to five minutes mask drying time is required, depending on the amount of reduction with ammonia. The thinner solutions dry faster than the undiluted latex solution.

There is always the possibility of confusion in selecting the proper latex material. Many latex solutions are chemically produced; they are synthetic latex. The best masking latex is a natural latex. Many of the synthetic solutions have less elasticity than natural latex; this elasticity feature is of utmost importance in the easy or automatic removal of latex masks after the painting and drying cycles.

Some flat surfaces can also be masked with latex, depending on whether or not the applied paint finish is to be baked, but the degree of heat and the baking time must be considered. Latex masks are not effective at high heats. They are most effective as masks

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with the air drying paints or lacquers, but can be used when the baking heat does not exceed 250° F. At any heat above 250° F., there is some chance that the latex material may vulcanize itself to the masked surfaces.

Primarily, latex is water soluble in its liquad state, but it is not affected by water after it has been allowed to dry. Likewise, while the latex will readily accept ammonia as a diluent, it is insoluble in paint solvents if it is not exposed to the liquid paint for long periods of time. This type of mask is effective with nearly all types of paint.

The latex mask, on drying, wraps itself tightly around the masked surface so that the liquid paint cannot seep under the masked edge. This type of masking will accommodate all of the different methods of paint application. Such masks have been used with flow coating, dipping, slow withdrawal dipping and even with tumbling. More often than not, the mask is not visible after painting until it is being removed.

The average normal life of a latex mask is sufficient to include storage and assembly or even shipping time. It can be removed immediately after painting, prior to assembly on the line, or by the end user of the product.

Where a large volume of latex masking is done, such as on multiple terminals, etc., removal of the masks is a very simple operation. The masked terminal or other masked projection is merely touched to a power driven wire brush rotating at 1800-rpm. The brush wire, when lightly touched to the latex mask, grips it and peels it off quickly without touching the masked surface underneath. The wire brush discards the stripped-off mask in the form of small rubber pellets.

In many cases application of the mask can be made very simple. A shallow tray, with controlled depth, can be used to prevent over-masking. The part need not be hung for mask drying or drainage since the latex will not normally flow beyond its dipped depth. The latex mixture is relatively inexpensive and the small quantities in mixed use can be discarded at the end of the day. The raw latex should be kept covered when not in use.

Jigs and brackets can be used as guides on a wire brush to prevent scratching of the part beyond the masked area.

The latex masking liquid can also be applied by brush and it can be applied with a lettering pen for fine work such as on dials.—*O.C.R.*

Booklet on Ovens and Dryers

The J. O. Ross Engineering Division of Midland-Ross Corp., 444 Madison Ave., New York, N. Y., offers a new 8-page, 2-color booklet pertaining to Ross Ovens, dryers and heaters used to produce the "engineered atmospheres" for paint finishing and other processes requiring engineered air systems.

The booklet illustrates applications of Ross equipment in finishing Automotive parts, preparing metal for painting, baking paint coatings, etc.

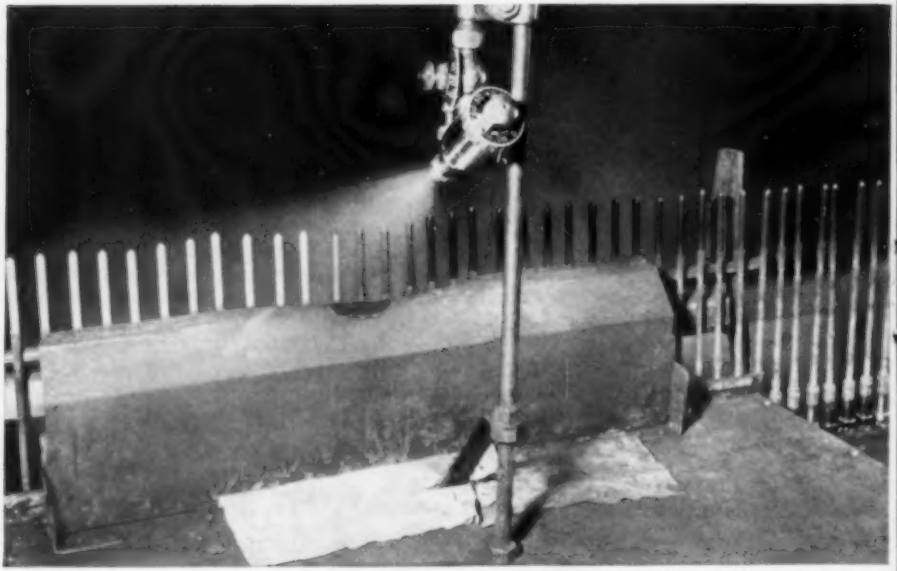
Included in the booklet is information on Ross indirect oil or gas-fired heaters, a shell-type direct air heater, a tubular type indirect air heater, and the Ross Supertherm high pressure hot water heating system.

For more data, circle 29 on colored card.

DeVilbiss Spray Gun Catalog

The DeVilbiss Co.'s new 16-page illustrated catalog contains complete information on the air cap and fluid tip combinations for all of its spray guns for spraying all possible sprayable liquid materials. Spray guns in a variety of styles and sizes are illustrated and described. These include type P-JGC guns for spraying catalyst and additive materials, several kinds of automatic spray guns, extension guns, flock and cup guns, air dusting guns, etc. It's catalog I-2000; The DeVilbiss Co., Toledo 1, Ohio.

For more data, circle 30 on colored card.



TEFLON is sprayed on line of inner barrels moving toward sintering oven at Parker Pen plant in Janesville, Wisconsin.

Du Pont TEFLON® *Finish helps*

This remarkable new Parker 61 pen fills itself through a special tubular ink reservoir which is coated with TEFLON. As the reservoir is removed from the bottle, ink drains off it—no mess, no wiping necessary.

TEFLON Finishes are water-repellent. Liquids drain completely from a surface coated with TEFLON. Almost nothing—liquid or solid—will adhere to it.

TEFLON remains unchanged in temperatures from 390° below zero to 480° above. Electrical properties are outstanding. And for all practical purposes, parts coated with TEFLON can be considered self-lubricating.

TEFLON is already being applied with excellent results to such varied products as transformers, paint mixers, spark plugs and the interior of piping. On production-line machinery, too, TEFLON used on critical parts virtually ends shutdowns for cleaning. Machine speeds increase, output leaps as a result.

Parker's new self-filling pen is removed from ink bottle with no stain or trace of ink on barrel which is surfaced with TEFLON.

Heart of new pen is its inner barrel, which is finished in TEFLON to assure clean, safe, and consistently failure-free self-cleaning.

create new clean-filling pen

New uses—large and small—are constantly being found for TEFLON Finishes: to improve efficiency of existing products and machinery, to solve long-standing design problems, to create completely new products.

Learn how TEFLON Finishes may aid your company. Write for Du Pont's illustrated booklet and spec. sheets. No obligation. E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington 98, Delaware.

DU PONT INDUSTRIAL FINISHES

DU PONT

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

EDITORIALS

Choosing Materials On Cost Plus Performance

★ The cost of applying organic coatings is one that has come in for a lot of attention in practically all finishing literature, yet more controversy is encountered on this subject, by everyone connected with industrial finishing.

Really there is no cut and dried method of determining true cost value comparisons between different finishing materials. Each material will have individual favorable characteristics, but since the ultimate product has not yet been formulated, it will also have some disadvantages.

Non-volatile content or solids is one method of determining value of lacquers or enamels. Now, theoretically at least, since the film formers in a coating are the solids, it would appear that in a comparison of say two hot lacquers at the same price, the one having 5% higher solids would be the better bargain. However, this situation must be examined more fully. Let us say that the higher solids material can only be sprayed at 1¼ pints per minute delivery, whereas the lower solids material can be applied at the rate of two pints per minute. Which then, would be the more economical material? Certainly, in most installations, a sacrifice in 5% mileage is adequately compensated for by a 60% increase in production.

Even the foregoing may not be the final or conclusive answer to the problem. Let us take the case of a porous plywood which is being coated. A high-solids material is used which sinks into the pores of the wood. Another lacquer or varnish with lower solids at the same price or even a higher price becomes available.

Should this latter product be immediately disregarded as a high cost coating? Certainly not, for it may very well be that this lower solids varnish or lacquer will tend to "sit on top of the pores" and not sink in. A comparison of the finished appearance would probably favor the low-solids high-cost material. It depends upon the end result desired.

Furthermore, upon examination it may be found that greater paint mileage is obtained from a lower-solids product. Thus we can see that the "build" of a coating is not always a true mathematical function of its non-volatile content. Solids are only one measure or guide to coating values, but by no means can they be considered the final test of a decision.

Many other factors enter into the selection of finishes, such as hardness, mar proofness, toughness, durability, etc. If one of these characteristics is required in high degree, this might conceivably increase the cost of the material. It is difficult to place definite numerical values on these factors. A cost accountant, miles removed from the finishing operations, cannot

---

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

Outdoor aluminum needs the protection of Half-Second Butyrate lacquers—

ARCHITECTURAL ALUMINUM, for example

North Central High School, Indianapolis, controls sunlight and reduces summertime heat transmission with aluminum sun cornices. The attractive finish of the aluminum surface is protected from weathering by a clear coating of a Half-Second Butyrate lacquer.

Weather-resistant Butyrate Coatings Preserve Reflectivity and Appearance of Sun-Control Units

While aluminum withstands weathering without undergoing structural damage, its surface does deteriorate. Its luster is replaced by a greyish-white oxide film. Under the severe conditions found in most urban and industrial areas, aluminum corrodes and pits...and these pits collect dirt and grime.

For aluminum sun-control devices, such as awnings and sun cornices, a severely weathered surface means a marked decrease in heat reflectivity and light control.

O. O. McKinley, Inc., of Indianapolis, Indiana, a leading producer of sun-control devices, found the answer to this problem by protecting the aluminum surface of its products against oxidation, corrosion and pitting with a water-white lacquer made from Eastman Half-Second Butyrate.

Result: the efficiency and appearance of the sun-control devices are preserved.

Aluminum products used outdoors need the kind of protection provided by Half-Second Butyrate lacquers. These lacquers are easy to apply, economical to use and afford excellent protection with a single coat. They are available from lacquer manufacturers in all parts of the country. Write us for information.

A new 15-minute, 16mm. sound color film entitled "Half-Second Butyrate—a protective coating for exterior aluminum surfaces" is available without charge for viewing by those who design in, specify or use aluminum in any way as an exterior material.

HALF SECOND BUTYRATE
an Eastman film former

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; New York City; Framingham, Mass.; Cincinnati; Cleveland; Chicago; St. Louis; Houston. West Coast: Wilson Meyer Co., San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.

Eastman Chemical Products, Inc. PLEASE PRINT
subsidiary of Eastman Kodak Company
260 Madison Avenue, New York 16, N. Y. DATE

Please send film on Half-Second Butyrate to:

COMPANY

REQUESTED BY TITLE

ADDRESS

CITY ZONE STATE

DATE PLANNED TO SHOW ALTERNATE DATE

accurately evaluate the costs of these intangible properties.

Suffice it to say that the actual price paid for a gallon of coating material does not exactly represent the true picture. Even those representatives who sell, and those finishers who buy materials based on a solids content, or "how much can I thin it" basis, may be deluding themselves into a false complacency. For accurate results, the production obtained (less rejects), the labor expenditure, and the actual gallons of finishing materials used—these will be the chief determining factors. Any single yardstick is really inconclusive.—*N. Gaynes.*

Cost Reducing Program; Where to Look and Why

With possible areas of cost reduction confined to waste elimination, better methods and more efficient equipment, management has little choice but to comb over each of these to the fullest extent. The exploration should be extended to include all three categories. Give each one a complete and thorough analysis.

Waste may be made up of time or material or both. In looking for waste the search must be extended and traced to the cause of the particular item of waste. Get to the source of it; find out why it exists. The three categories cannot always be separated entirely. Waste may originate with faulty methods or with outmoded equipment. It might stem from tradition—the thing every plant must fight against—that old cliche, "We've always done it that way".

Rejects represent waste. In some kinds of work they cannot be entirely eliminated, but in any event the cause can be established and corrective measures can be taken to reduce the number of rejects to a minimum.

Poor or faulty methods may start with the storage of raw materials and extend through material handling, fabrication, surface preparation and finishing, on to parts storage, assemblying and packaging.

Are your drums of paint stored outside or in an area where the contents may be chilled in cold weather and overheated in the summer?

Look at your surface preparation facilities, methods and management. Do you have efficiency and economy here? Faulty surface preparation can easily add to the cost and burden of the finishing room; and it can be responsible for lack of adhesion of the paint, excessive rejects, complaints and returned goods.

Outmoded equipment could include both old and new facilities. One example would be an oven that lacks proper controls and ventilation, resulting in non-uniform heat; too much time in the oven and a poorly baked finish.

An example of a new machine becoming inadequate might be a frail roller coater installed for light intermittent service. Suddenly it becomes necessary to operate this roller coater almost continuously on heavier work —perhaps two or possibly three shifts a day. While it is still a new machine it is not built for, nor is it intended for heavy continuous service. Results: Excessive vibration develops; perhaps poor application of paint, and probably frequent break-downs.

Explorations of cost reduction must be complete and thorough. An outside consultant is usually better qualified to look over an operation and find the weak links. He hasn't any "pets" to purposely overlook and pass by. Company personnel are probably responsible for at least part of the present setup and they are likely to be unduly influenced in their opinions and decisions. Someone's pet theory may prove to be a booby-trap.

COMPLETE PAINT FINISHING SYSTEMS

SEND FOR FREE CATALOG
Describes and illustrates many installations of Spra-Con Complete Paint Finishing Systems.

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Spra-Con Automatic Paint Applicator
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LETTERS from READERS

Coating Aluminum Windows

In May issue, page 80, we read a request for "Coating Aluminum Windows" from W. Co. If you will please give us the name of this company we would be happy to discuss all facts regarding their request or, if such is not the case, if you would give them our name, we would be glad to hear from them.—*Aluminum Co. of America.*

We have what we believe is a rather novel approach to such a problem, and would like to propose this to W. Co.—*George Koch Sons, Inc.*

In a letter we are giving you the name and address of W. Co.—*Editor.*

Finish Display Panels

Thank you for publishing our release in the May 1958 issue of *Industrial Finishing* (page 112). We have had a number of direct inquiries resulting from it.—*The Q-Panel Co.*

We Can Supply Them

We are interested in the names of the following concerns requesting information in the June issue: "Print Edges of Tops," by O.M.S. (page 96) and "Plywood Panel Finishing" by L.L. Co. (page 101).

For many years The Union Tool Corp. has made roller coating equipment and has also designed and recently offered the market a small edge graining applicator which is portable. Your published items seem to indicate the need for these products.—*U.T. Corp.*

Information given.—*Editor.*

Finishes for Plastics

In May issue, page 78, we read an inquiry under the above title from S. & W. I. We have been quite successful in making spray coatings for plastic surfaces for the past ten years. If you will give us the name of this company we would like to contact them, to advise them that we make spray coatings for plastics. —*O'Neal Paint Products, Inc.*

Information supplied.—*Editor.*

For Gold Leaf Trouble

Referring to R.B.'s question "Gold Leaf Trouble," published in May issue, page 87, we believe that we have a product which will solve the problem. Send us his name and address.—*B. B. Chemical Co.*

Information supplied.—*Editor.*

To Patch Dents in Metal

Help! Who makes what kind of material for patching dents in sheet metal? Something that can be applied and sanded to a feather edge

FORWARD

If your Finishing Department hasn't yet discovered the many benefits of using Spruance Finishes, you may want to "forward" this little message to your company's: *Sales Manager*—he may want to learn how Spruance Finishes can help make the sales curve climb; *Purchasing Agent*—he may want to hear how Spruance Finishes, service and delivery satisfy everybody concerned; *Finishing Foreman*—he may want to compare the ease of handling, speedy drying, superior protection of Spruance Finishes; *Maintenance Chief*—he may want to hear how Spruance Finishes improve and protect buildings and equipment. If you're one of these men . . . why not pass this on to the others? That way, everybody can write, wire or phone for complete information.

Spruance

THE GILBERT SPRUANCE CO.

*fine finishes

Philadelphia 34, Pa. • Winston-Salem, N.C.

Wood Finish Originals • Metal Finishes • Maintenance Paint Products

easily, and can be sprayed over with a bake enamel that is cured at 325° F.? Will welcome any or all salesmen that will call on us regarding this.—*Arista Steel Equipment Co., Inc., Brooklyn.*

In letter we are giving you four sources of supply.—*Editor.*

"The mystical crystal ball in its great wisdom says your question about anodizing and color decorating aluminum products is answered on page 26 of June 1958 issue of Industrial Finishing Magazine, and for further information, you ask the Reader Service Department . . . . . "

Answer to "Magic Words"

Agate Lacquer Mfg. Co.: I read your comment in June issue, page 92, about my article "Magic Words May Confuse You," which appeared in May issue on pages 48-49.

I agree with you completely in regard to epoxy resins. It was not my intention to convey the impression that epoxies are the ultimate in resins. There are many instances where polyurethanes or cross-linked nitrocellulose, using titanium chelates will perform far better than epoxies. In some cases the regular alkyd-urea-melamine will be preferable.

When I mentioned, "the finer points of chemical resistance and durability," I had in mind those applications where resistance to the polyglycol jet fuels and skydrol hydraulic fluids are of paramount importance. It seems that thus far only epoxies have proved successful.

Thus it was my feeling that unless "the finer points of chemical resistance" are required there may be no need for an epoxy with its higher raw material cost.—*N. I. Gaynes.*

Liquid Stainless Steel

We are interested in a new product described as a liquid stainless steel. The material is further described as a formulation of microscopically fine flakes of stainless steel with a binder of resin plastic.—*A.A.*

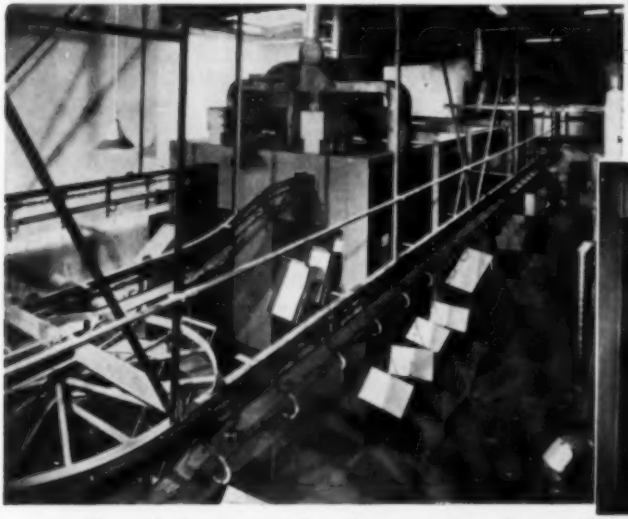
We believe this material can be supplied by the Lockrey-Fater Corp., 38-13 10th St., Long Island City 1, N. Y.—*Editor.*

Wood Grain Finishing

We believe there was an article in Dec. 1957 issue of this magazine in connection with wood grain finishing, as done by the Berman Cabinet Co. Will you please send us a copy of this article, or a December 1957 copy of *Industrial Finishing?* — *B. Woodcraft Co.*

The article was entitled, "Putting the Finish on TV and Hi-Fi Cabinets," and describes finishing operations at L. Berman & Co., Evansville,

THIS DESPATCH FINISHING SYSTEM PROVIDES MAXIMUM PRODUCTION with MINIMUM MANPOWER



Overhead conveyor (at left) carries component parts through washing, painting, drying processes.

Spray booth (below) where each part is painted from opposite sides.

Semi Automatic Operation Speeds Work Flow for Office Furniture Manufacturer

Fifty thousand pounds a day production with only nine employes—that's the potential for the DESPATCH Finishing System recently installed in the new 37,000-square-foot Art Steel Company, Inc., plant at Los Angeles, Calif.

Consistent surface texture, even color, with a finish that is neither soft nor brittle and well bonded to the metal, are basic requirements in the manufacture of high quality steel office furniture. Less than one hour needed to complete finishing cycle, here. Installation occupies only one-sixth of plant area.

Whether you sell to industry or the consumer, let DESPATCH's experience in evaluating, recommending and creating completely engineered finishing systems help solve *your* particular problems.

WRITE TODAY FOR BULLETIN 51G

16 colorful pages on modern ways to achieve better finishes, faster production and smoother metal products handling . . . at lower cost.

DESPATCH OVEN COMPANY

619 S. E. Eighth St., Minneapolis 14, Minn.

Sales and Service in All 26 Principal Cities

PIONEERS IN ENGINEERING FINISHING SYSTEMS FOR INDUSTRY

Indiana. (Back issues of I. F. are valuable; keep them). We are sending you tear sheets of the article. —*Editor.*

What Slogan for Caskets?

Regarding your article, "Production Thinking," in May 1958 issue, page 52, perhaps someone could think of a better slogan for our operation (casket manufacturing) than the one in your article, namely:

"Would you be happy to buy the product you have just completed?" —*Grand Traverse Metal Casket Co., Ralph O. Miller, Finishing Foreman.*
P. S. It was a fine article.

Readers: Any suggestions?—*Editor.*

Wanted: Good Respirator

We are interested in buying a very good respirator. We do a lot of spraying; also we use a very potent solution in our dip tank for stripping furniture. We have tried two different respirators . . . . and neither one works. The fumes penetrate through the filters and we feel worse after using them.

Will you please either refer this request to companies making respirators or send us the names and we will contact them? We are eager to get one as quickly as possible.—*L.F.H.*

In a letter we are giving you names and addresses of suppliers.—*Editor.*

Aluminum Lamp Shades

We would like to get the complete address of J.C.W. Co., Des Moines, Iowa, who has made an inquiry about finishing polished aluminum parts to simulate electroplated brass, bronze, copper, gold, etc.—*Maas & Waldstein.*

Information supplied.—*Editor.*

Tumbling Machines

Will you please send to us the names and addresses of manufacturers of tumbling machines, etc., which you mentioned on page 98 of April issue, answering a question on finishing furniture legs.—*T.T. Co.*

Yes, in a letter we are giving you the names and addresses of several. —*Editor.*

Gasket Squeegee Painting

In May issue, page 74, "U.S.F." asks about machinery for painting long handles by the squeegee process. We do not manufacture this type of equipment but we have been servicing manufacturers of brooms and similar items which require this meth-

MAR-PROOF LACQUER

SCHAEFER'S Mar-Proof Lacquer is a performance-proven finish that cannot be easily marred or scratched.

It's tough—tougher than the ordinary lacquers; meets the most critical requirements of current production.

Made in either clear gloss rubbing or satin finish, it produces a splendid transparent coating of full depth on maple, walnut, gum, mahogany and other cabinet woods.

Economical; gives plenty of coverage and dries quickly. Our Mar-Proof Lacquer Sealer is recommended with it for a first-coater.

Working samples furnished without obligation. Write for them!

THE SCHAEFER VARNISH COMPANY, INC.
Louisville, Kentucky

SCRATCH-PROOF

MAR-PROOF

STANDS LOTS OF ABUSE

od of finishing. We have developed various coatings, specifically designed for this purpose. In view of the foregoing, perhaps we can save the "U.S.F." company much experimentation and expense—if you will identify the company.—*United Lacquer Mfg. Corp.*

Information furnished.—*Editor.*

"Well, thank you; this will cover the down payment on the finishing plant! I don't know how I can ever repay you!"

Will Solve Noise Problem

In June issue, pages 101 and 102 the R.B. Co., writes about, "Our Metal Roof Problem; Condensation; Noise." Would you please put us in contact with the company making this inquiry? We believe we can solve this problem for them.—*Prosul-Kote Insulation Co., Chicago.*

In a letter we are giving you their name and address.—*Editor.*

May We Use Article in Our Bulletin?

May we have your permission to reprint page 82, in the May issue of Industrial Finishing? The article is signed by C. Brown.

Our purpose is merely to add further emphasis and verification to what we have already said (about our product "Dalax") in our own bulletin dated April 1st, a copy of which we are sending you.—*American Paint Co., Chicago.*

Permission granted.—*Editor.*

Who Wants Paint Sludge?

We are interested in determining the usefulness of various residues of over-sprayed baking enamels for possible reclamation. Could you supply us with possible sources who might be interested in reclaiming these "water-washed" materials? — *B-L-C. Division of G.M. Corporation.*

In a letter we are giving you names and addresses of several concerns that process paint sludge.—*Editor.*

Painting Farm Tractors

We would be pleased to receive any tear sheets of articles published on the cleaning and painting of farm combines and tractors. Especially interesting would be flow sheets of the operation. One of our customers has asked us for help in this regard. —*RM. Co.*

In a letter we are sending you tear sheets of a few articles published in I. F. on this subject. (Back issues of this magaizne are valuable; keep them).—*Editor.*

UNICHROME

COATING 6400

Rich texture of morocco leather in a sprayed vinyl finish . . .

This extraordinary finish is hard enough for high mar-resistance, yet is flexible and chip-proof. Sprayed, it applies easily to complicated shapes . . . unlike embossed vinyl laminates with their cementing and seams.

Film thickness ranges from 8 to 40 mils. Outlasts ordinary textured enamels by 10 to 1 . . . withstands corrosives. Ideal finish for quality products. Send for bulletin.

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Above are just a few of America's most progressive furniture manufacturers. These and many others* are profiting from DeBurgh Finishing Systems. A no obligation engineering service will show you how to add YOUR name to this distinguished list.

* Complete listing on request.

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10 So. Eleventh Ave., Evansville 4, Indiana

ROCKFORD VARNISH

RV

ROCKFORD, ILLINOIS

COVERAGE

Yes, coverage is important to this young lady — but with a varnish or lacquer it is even *more* important. We have been custom-compounding industrial finishes of many kinds for many years. Our staff is skilled, our knowledge is extensive, our efforts are thorough. Why not let us *show* you the coverage we can give . . . ?

MANUFACTURERS OF PROTECTIVE AND DECORATIVE FINISHES

QUESTIONS and ANSWERS

Coating Hardboard

We are applying chalkboard coating to two sides of ⅛-in. hardboard. At present we are using a roller coater, but would like to obtain information on a motorized roller system of applying this coating. We would appreciate any information you can send us.—*C.P.*

As you probably know, the surface of commercial hardboard contains many imperfections—hills and hollows which are practically invisible until the surface is given a ground color coat preparatory to the transfer of wood grain or other design used, for instance, in wall paneling. These imperfections can be eliminated only through reverse roller coating. This operation fills up all of the low places or hollows and presents a perfectly level smooth surface for the pigmented ground or base coat.

It is my understanding that hardboard is available from the Masonite Co., which has the surface pretreated, that is, it has been reverse roller coated and primed in a neutral color.

If your product does not require the perfectly smooth level surface, and if you wish to coat this stock with only a color coat, and you want to get away from roller coating, I suggest that you investigate the latest method of application, that of pouring or flowing the material on the surface. In this method of application the sheet stock is conveyed through a controlled curtain of coating material at speeds up to 500-ft. per minute. The wet film thickness of the coating applied to the sheet stock is controlled by the viscosity of the material, the volume of material released in the curtain (controlled by back pressure) and the speed of the conveyor. This is a fast and economical method of coating sheet stock.

If you require a perfectly smooth surfaced hardboard, then a reverse roller coating machine is available from the Schmutz Mfg. Co., 1600 W. Main St., Louisville, Kentucky. The filler material to use is entirely different from the filler used on wood or that used for particle board, commonly referred to as chipboard. In a letter I am revealing sources of supply for this special kind of filler.

In case you are interested in the pouring or flow coating of sheet stock, you may write to Wilco Machine Works, Inc., P. O. Box 3722, Municipal Airport, Memphis 14, Tenn., distributor of the Steinemann machine. —*B.C.M.*

Putty Edges of Doors

We specialize in spraying new kitchen cabinets for the trade and one of our biggest problems is puttying the edges of the doors. It has been our practice to use white paste filler and to apply it by finger to the edges. This process is time consuming and tedious. Several other methods have been suggested but they failed to solve our problem satisfactorily.

The reason for puttying the edges of doors and drawer fronts is the fact that the process of manufacturing involves the use of routing machines to cut the doors and drawer

WATER WHITE LACQUER

Daconite 5600 Water White Lacquer saves time and money on the production line, makes your product sell faster in the market.

A ready to spray clear lacquer, (Alkyd fortified) Daconite 5600 is recommended for use over blond stains, light fillers, light natural woods, Masonite and metal.

Daconite 5600 has excellent cold check resistance and produces a finish of exceptional paleness and color retention quality that will not ring from alcohol, water or hot dishes. It is highly resistant to scuffing and scratching.

5600 has been fully tested under actual market conditions. It has all the time and money saving features that assures you of production line economy as well as superior finished results.

Write for specifications sheet and testing samples on your letterhead.

JAMES B. DAY & COMPANY

1872 Clybourn Avenue • Chicago 14, Ill.

fine production finishes for industry since 1906.

fronts from large 8-ft. ply panels. This cutting machine does not cut clean even edges. It leaves a pitted rough surface which must be smoothed out for the top coating. Our problem is the conditioning of these edges for a smooth clean finish coat.—*F.N.*

Have you thought of using a smooth cutting saw instead of a router to cut the doors and drawer fronts from the larger panels? If the pieces of plywood are beveled, this also might be done with a saw. This would certainly produce smoother cutting across the grain of the wood.

If it were possible to machine cut these doors and fronts with a smoother edge, perhaps you could then spray filler on the edges in multiple, pad-in and wipe off. This spray filling might give you a sufficiently smooth surface for your top coats of enamel.

If it is impossible to get away from using the router, then putty glazing is the only method I know of to get a smooth surface along the edges. You might try priming the edges first; then knife on the putty instead of applying it by finger. You will find that, with experience, an operator can apply putty on the edges as fast as a glazer applies putty to a sash channel—and that is pretty fast. Allow it to dry and then sand lightly. You will find that puttying a primed surface is much easier and faster than puttying the end wood in the white.—*C.K.J.*

Aluminum Finishing Brochure

Engineering Products & Specialties, Inc., Dunnell Lane, Pawtucket, R. I., New England's largest aluminum finishing plant, announces that its all-new brochure of services, "The Finishing Touch," has been completed and is now available upon request.

The brochure is of special interest to all industries that manufacture products in which aluminum is used as either a decorative or functional part.

Ultrasonic Cleaning

We notice an inquiry under the above title in June issue, page 96, where C.W.Co. wants information about ultrasonic cleaning of metals on a production basis.

"Silent-sound" scrubbing on a production-line basis has become practical. We have designed and built this equipment to provide maximum benefits of ultrasonic cleaning. Actual operation has demonstrated these true plus values.

Ultrasonic cleaning has been developed to remove tight soils from hard-to-clean parts. Such soils or contaminants are buffing compound; polishing rouge; metal chips; set-up oils, greases, grinding and lapping compounds; metal-flaw-detection compounds; rust and many others. Hard-to-clean parts are those with blind holes, internal threads, intricate recesses, curved crevices and indented surfaces made of steel, cast iron, brass, aluminum, plastics and glass.

Our engineers designed and built this new ultrasonic cleaning equipment based on extensive research and experiments. A typical application is found in our 5-stage monorail type machine. Operation is completely automatic; all that is necessary to start this equipment is to push a button. The conveyor is a "power and free" indexing type consisting of two monorails mounted one above the other. Fixtures or baskets attached to the lower conveyor trolleys carry parts through the machine. A drop section in the lower monorail is positioned at the ultrasonic cleaning stage. The conveyors are indexed to stop at this point where a pneumatic hoist lowers the trolley and fixture or basket of parts into the ultrasonic tank for sound wave scrubbing.

Heavy or loose soils are cleaned from parts by spray action at two stages before ultrasonic cleaning. This

'BARTELS'

Bartels Industrial Finishes

For Better . . . Research—Quality—Service

GORDON BARTELS CO., ROCKFORD, ILL., LANCASTER, PA.

limits contamination of the ultrasonic cleaning solution and reduces the time required for ultrasonic scrubbing. "Walking" sprays subject the parts to a high pressure spray from all directions. Water solutions are used for: 1) safety; freedom from toxic fumes and non-flammability; 2) low-cost; approximately 6 cents to 8 cents per gallon, and reduction of loss from evaporation; 3) cleaning results; tests reveal maximum cleaning with water solutions.

Equipment required for practical ultrasonic cleaning includes the generator to supply high frequency power and the transducer to convert the power into high frequency sound waves above the audible range which agitate the solution in the ultrasonic cleaning tank. This machine incorporates an electronic type generator and a magnetostrictive type transducer.

After ultrasonic cleaning, rinse solutions and hot air dry are filtered to insure thorough soil removal. Total floor space required for this particular machine is only 100-sq.ft. Solution heating can be designed for gas, steam, oil or electricity.

The parts to be cleaned, the cleanliness demanded and the process—all of these determine the design and number of stages of the equipment.

Savings effected by automatic conveyorized ultrasonic cleaning equipment can more than justify its initial cost in a relatively short time. Ultrasonic cleaning with safe, low-cost water solutions by hand methods alone have been known to save direct labor as much as 75%; solution costs up to 90%; and re-work costs, due to rejects, as much as 50%. Add these figures to the savings possible with an automatic conveyorized system and the saving of valuable floor space in order to arrive at over-all savings possible with ultrasonic equipment.

The true value of ultrasonic cleaning can be best determined by submitting samples of your parts for test in automatic conveyorized ultrasonic cleaning equipment.—*Ransohoff, Inc., North 5th St. and Ford Blvd., Hamilton, Ohio.*

Rust Break-Through Can Be Treated Successfully

Mr. Zahn: Your answer to the question of rust breaking through the finish on steel drums (June issue, pages 100-101) is interesting and we agree with you that, if you can observe the application and make adjustments, the present method of operation will be successful. However, our product Penetrol may be of help.

As an air-drying operation outdoors, many thousands of rusty steel drums have been coated successfully and efficiently at low cost with Penetrol. Most of these drums had a film of tight, granular rust, but otherwise they were fairly clean—or as clean as the average drum can be when stored outdoors. Some of them must have been steam cleaned and some wire brushed, but whatever the cleaning method it was rather superficial and done by unskilled labor. The rust was soaked with Penetrol and in 24 to 48 hours the drums were painted with enough Penetrol in the paint for easy application.

It occurs to me that the problem, as outlined in June issue, can be helped if Penetrol is wiped on after the drums are cleaned; and, if it is compatible with the type of primer being used, it would not be necessary to wait for the Penetrol to air dry. Wiped on, of course, there would be very little on the cleaned drum and this would bake with the primer.

A full coat of Penetrol should stop rust action on the drums, although quite rusty, that would not need any more than steam cleaning. This will

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radiant heating news

to help manufacturers improve production operations

How to choose the right INFRARED for radiant ovens...

Consider, first of all, that processors using infrared generally find *electrical* radiant heating superior. Here are three good reasons:

1. *Greater Control.* Heat is directed more accurately to product at variable rates, and easily controlled.
2. *Cleaner.* No products of combustion exist in electric infrared ovens.
3. *Reliable supply.* Electricity is the modern fuel always available in large quantities.

Source factors to consider: Of all electric infrared sources, only these are proved practical for general industrial use in radiant ovens:

1. Clear glass lamps (G-30 type)
2. Quartz lamps (tubular shaped)
3. Quartz tubes (tubular)
4. Metal sheathed rods (tubular)

Each of these heat sources has distinct characteristics. All have advantages and disadvantages under certain conditions, as listed in chart below. A choice should be made only after evaluating each according to the following factors:

• Heat output (intensity)

Determine intensity (or heat rating) you require—the amount of heat in watts or BTU available per square inch or square foot. No need to select high-watt rated sources if not needed.

• Efficiency

Electric infrared oven users obtain a reliable rating in watts or BTU delivered to heat source at all times. *Radiant efficiency* of electric infrared sources vary according to their temperature. The higher this temperature, the greater is radiant efficiency. Sources that operate at lower temperature give off more convection heat, less radiation. Efficiency of an electric infrared oven also depends on proper selection of *reflecting surface, contour of reflector* and *oven design.*

• Speed of response

How quickly oven reaches operating temperature is important in many applications—and so is the speed with which oven cools down. If "override" temperatures present a serious problem, heat sources with instant response are preferred.

• Cost factor

Costs vary among infrared sources, so cost differences can be justified only after evaluating job requirements. Low-priced infrared lamps can be used if they do the job. Requirements for faster heating, for higher intensity, for extra ruggedness, and other factors usually dictate the choice of heat sources. It's almost automatic.

We will gladly advise you. You will get unbiased counsel when we help you select the right heat source. No other infrared supplier can offer you *all* practical sources—and none provide such complete service *before and after the sale.* Proper design, skilled installation and continuous efficient performance with greatest economy are assured.

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Comparison Of Infrared Heating Sources

CHARACTERISTIC	QUARTZ LAMP	METAL ROD	QUARTZ TUBE	G-30 CLEAR LAMP
Potential Heat Output	Very High	High	Low to Medium	Low to Medium
Splash Resistance	Very Good	Very Good	Very Good	Low
Impact Resistance	Low	High	Low	Low
Color Sensitivity	Low	Very Low	Very Low	Low
Life Expectancy	Very Good	Very Good	Good	Very Good
Brightness (visible light)	High	Low	Low	Medium
Response (heat up, cool down)	Quick	Slow	Medium Slow	Quick
Cost Factor	see cost factor paragraph above.			

THE FOSTORIA PRESSED STEEL CORPORATION • Fostoria, Ohio

bake, but at fairly high temperature, in one or two hours; and then one or two coats of finish paint should be sufficient. Naturally, a check must be made on the solvent effect of an epoxy material, and the question of bonding must be determined too. Ordinary baking enamels will bond well with baked Penetrol.

Air-dried Penetrol should not be subjected to the baking of finish coats. If you would like a sample, we will be glad to send it.

By the way, when I was in Denmark two years ago I found teak wood furniture being coated with Penetrol only. Three or four coats were applied the same day, with the last coat wiped; that is, as soon as one coat had soaked in, another coat was applied. Some of the table tops were given a mist coat of lacquer to produce a slight sheen, because Penetrol alone on raw wood is dull and flat.

Birch and maple table tops, particularly porch furniture, are easily treated and finished as described above with Penetrol only, with excellent results. I hope you will try it. *—Earl D. Flood, President of the Flood Co., Hudson, Ohio.*

Booklet on Vibra Degreaser

The accumulated knowledge of a capable research and engineering staff, gained through years of experience in the degreasing field, has been applied to the task of producing a modern degreaser. As a result of this effort, the unique and highly effective principle of "electro-magnetism" has been successfully utilized in the new Manpro Vibra Degreaser.

An illustrated booklet is designed to accurately and reliably describe the functional performance and potential of this new patented degreaser.

Included also are several brochures describing other standard Manpro degreasers.

For more data, circle 32 on colored card.

To Kill Smoke Odor in Refinished Furniture

I have three customers who have had bad fires in their homes and have come to me to restore their damaged furniture. I must find something which I can use to treat the insides of the cases to try to destroy the clinging odor of fire and smoke. This is on wooden cases only. I will refinish the exteriors but inside the cases, where the drawers, etc. are, there remains a strong smell of smoke, even after we wash it good with soap and water.—*S. Cabinet Shop.*

One thing we can think of at the moment is a "cedarizing" paint or clear finish. This has a strong odor of cedar. One of the manufacturers that supplies and specializes in this kind of finishing material is The Sparhawk Co., Sparhawk Bldg., Sparkill, New York. They call it Ced-R-Wood or Cedarizing Paint.—*T.F.*

I believe that if you spray the entire interior of the furniture with lacquer you will seal in the odor of charred wood, or as you put it the "smell of wood smoke".

Of course, if there is a lot of charred wood inside the furniture, the charred part or carbonized wood should be scraped or sanded off with coarse sandpaper. Then you can use either a clear or pigmented lacquer, and if you obtain complete coverage it should produce the desired results. *—P.C.B.*

More Urethane Foam Used

With barely two years of service in the field, urethane foam is now cushioning or padding the products of more than 200 furniture manufacturers.

The June-July issue of the Du Pont Magazine traces this development and gives reports on why firms are using urethane foam.

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The KIMBALL PIANO FINISH

By William J. Soto, Methods Engineer
W. W. Kimball Company*

GREAT PROGRESS has been made in the finishing of pianos, but even today piano finishing could hardly be classed as high speed production work. I do not believe it ever will be. Even in this very practical age, the "piano finish" must always stand as *the supreme finish in appearance and durability*. The Kimball piano finish does just that.

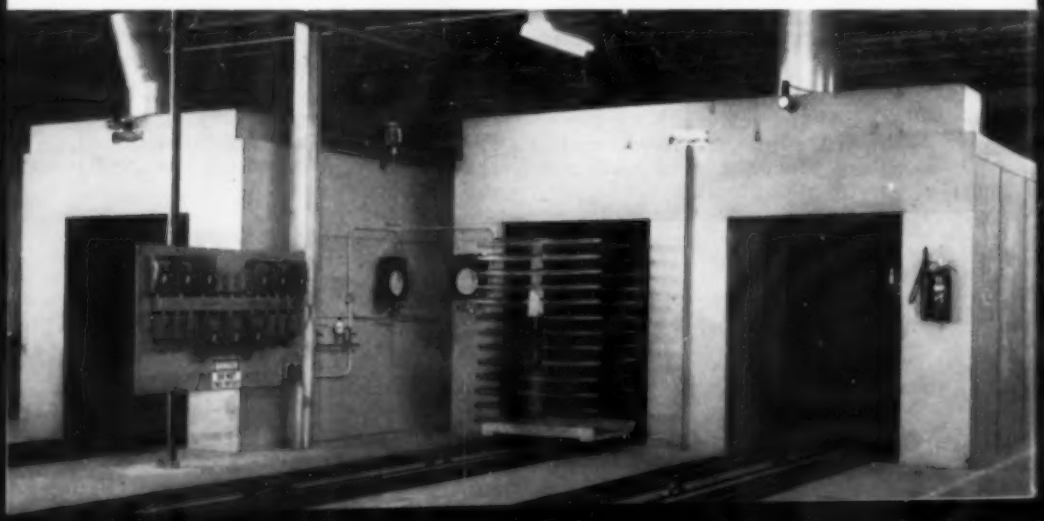
We build pianos of mahogany, walnut, cherry, korina, oak and maple. It would not be practicable to describe all of the various finishes on these woods, but I will give you representative finishes on several species—with the valued assistance of our finishing and sanding division supervisor, Mr. Andrew J. Mascheroni. First, let us group the mahogany and walnut together.

*Melrose Park, Illinois.

Glue Sizing and Sanding; Surface Preparation

Finishing really starts long before the wood parts arrive in the finishing room. All solid and plywood case parts are machine sanded (drum or belt) with No. 2/0, 3/0 and 4/0 sandpaper. Then they are glue sized with a 7/1 mix (7 parts of water to one part of glue) and allowed to dry overnight. The sized surfaces are then sanded with No. 4/0 sandpaper. Shaped parts are sanded on spindle sanders; plywood and mouldings are sanded on belt sanders. Then each part is

These three conveyorized drying ovens are used for drying filler and top coats of lacquer.



Here is a Style 57 Kimball Piano in the popular "Driftwood" finish.

hand sanded with No. 5/0 sandpaper and carefully inspected before it reaches the finishing room.

Just before finishing begins every surface must present a highly polished appearance, or it is returned to the sanders. A high quality finish cannot be obtained unless the surface has been sanded perfectly.

Stain, Wash Coat and Fill; Padding in; Wiping; Drying

In the finishing room, the first operation is to use a compressed air gun and really blow off all surface dust. Next we wipe or spray an NGR sap stain on all edges or parts which have exposed woods which are different from the face veneer. This is done to produce uniformity of color, after the spray staining operation. Following this treatment the entire surface of each case part is sprayed with NGR (non-grain-raising) stain.

The applied stain is allowed to air dry for ten minutes, after which all stained pieces are force dried in a batch type oven for ten minutes at 125° F., with 30% relative humidity. After a cooling period of 15 minutes a 6% solids lacquer wash coat is applied. This is allowed to air dry for ten minutes before the parts are placed in the oven for ten minutes of drying at 125° F., with 30% relative humidity. A cooling period of 30 minutes follows before the wash coated parts are sanded lightly with No. 5/0 sandpaper.

An oil-base filler is brushed on. We prefer brushing rather than spraying because we believe that it forces the filler down into the pores of the wood. The filler is padded in with a portable air-driven, reciprocating machine and finished up with hand padding. Filling is an important operation when the desired end result is high grade fin-

ishing. Complete and correct filling avoids pin hole troubles.

Excess filler is wiped off and the filled surface is cleaned up. This operation must be carefully done. During a 30-minute air drying period the parts are inspected before they move into and through the oven. There are four hours of drying at 135° F., with 35% relative humidity, followed by a one-hour cooling period.

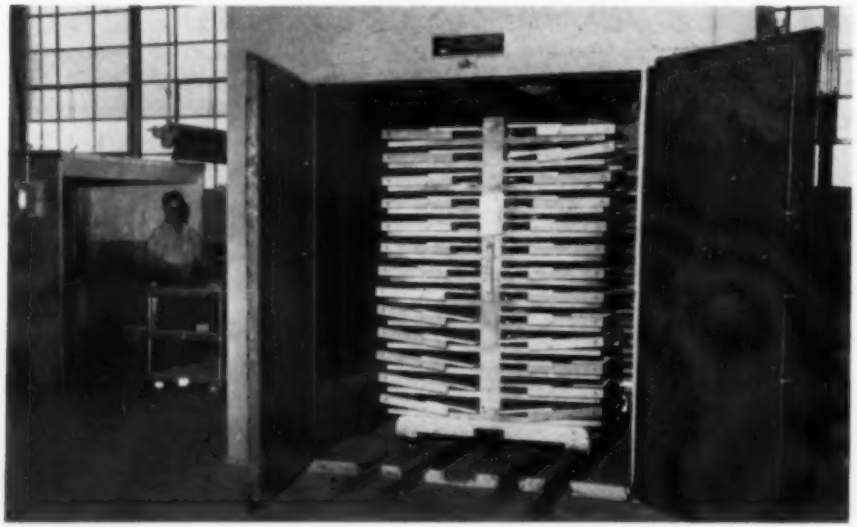
First Coat of Lacquer; Uniforming the Color

A 21% solids lacquer is applied to all four sides of each part. This 21% solids lacquer is used if the case is to be finished in cold lacquer. If it is to be finished in hot lacquer, we apply a 32% solids lacquer. All lacquer used, whether for sealer or top coats, is water white. After a flash period of 30 minutes the lacquer coat is force dried for one hour at 125° F., with 35% relative humidity. During a 30-minute cooling period the case parts are inspected and any needed patching operations are performed. Then the parts are lightly sanded with No. 400A sandpaper and tack ragged.

At this point all of the parts are moved to an inspection station where, under special lighting, the various surfaces are matched for color. This is done by wiping on the correct color of alcohol-base stain with a cheesecloth pad, using a method similar to French polishing. The parts are then allowed to air dry for one hour.

The second coat of lacquer is applied to the exposed surfaces only. This lacquer is identical to the first

Here you see piano case parts that have been stained by spraying, placed on portable racks and then moved into a batch-type oven for force drying.



coat with the same flash, force drying and cooling periods. This coat is also lightly sanded and tack ragged the same as the first coat.

Third and fourth coats of lacquer follow, both of them being the same as the second coat, except that there is no sanding after either of these two coats. Between the third and fourth coats of lacquer, decals are applied to the underside of the top and fallboard. After the fourth lacquer coat has been dried and cooled, final inspection is made and any necessary patching is done before the parts move on to the assembly room.

Rubbing and Polishing

After the piano trim is assembled it is transferred to the rubbing room. In the first rubbing station the case is rubbed with a portable air-driven machine, using No. 360 wet-or-dry sandpaper lubricated with a wax-base vehicle. In the next station the prominent areas of the case are hand rubbed with No. 400 wet-or-dry sandpaper, using the same lubricant. Tone chamber panels and mouldings are rubbed with No. 4/0 steelwool, using the wax-base lubricant. After wiping the surface clean, any final patching and touch-up operations that may be needed are performed. Then a wax-base cleaner is used to clean the entire case. A lambswool disc and rubbing compound are used to bring up a high polish finish when this is so desired.

Assembled piano cases are rubbed and polished on this line. The first operator uses an air-driven machine; this is followed by hand rubbing as cases move down the line.

Application of Our Cherry Piano Finish

Piano case parts that are made of cherry arrive in the finishing room thoroughly sanded. The first operation is to spray on a bleaching solution. This is allowed to air dry for 45 minutes after which it is force dried for four hours at 135° F., with 35% relative humidity. In some cases a second bleaching is necessary. The need for this can only be determined after the first bleaching has been force dried. Then a neutralizer composed of 50% vinegar and 50% water is sprayed on the bleached surfaces. After an air drying period of 45 minutes, the neutralized parts are force dried for four hours at 135° F., with 35% relative humidity. A cooling period of one hour follows.

All edges showing end grain are brush coated with a mixture of one part white shellac and four parts alcohol to seal the end grain. This coating is allowed to air dry 15 minutes. An oil-base glazing stain is applied with a cloth pad to the remainder of the panel and then

wiped off. The glazing stain is allowed to air dry for 30 minutes, followed by force drying for one hour at 125° F., with 35% relative humidity. After a one-hour cooling period, the first lacquer coat is applied. From this point on, the cherry case follows the same procedure as mahogany and walnut cases.

Korina Piano Finish

On korina case parts, all operations up to the filler application are omitted. From the filler operation on, these parts follow the same procedure as mahogany and walnut cases. In some instances, where the color variation is too great, the solid korina case parts require bleaching. The objective is to produce a case of uniform color. If this can be accomplished with an alcohol padding stain, this is used. Otherwise the parts are bleached, and the correct color is built on the bleached surface.

Paint Show Will Be Held in Cleveland's Auditorium

The 36th Annual Meeting and the 23rd Paint Industries' Show of the Federation of Paint & Varnish Production Clubs will be held in Cleveland, Ohio, from October 5 to 8, 1958, but at a site other than announced at the close of the 35th Annual Meeting in Philadelphia. It will be held in the Cleveland Public Auditorium.

E. Wright; Monroe Sander Corp.

Elliot V. Wright, secretary of the firm, has been made director of plant and laboratory operations at Monroe Sander Corp., with whom he has been employed for 30 years.

An inspection and patching station where piano case parts are hand sanded and patched.

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Heavy Waterproof Versus "Breathe-Through" Films

OFTEN IN THE application of industrial finishes, little or no interest is taken in the actual properties of the material being applied. Of course, the usual hardness, gloss, flexibility and, on rare occasions, the corrosion resistance will arouse some curiosity; but rarely is the permeability of the film even remotely considered; this is something overlooked.

In some phases of product painting water resistance tests are performed. This is particularly true in the aircraft field and in government testing laboratories. However, the testing personnel, and in some cases even the lacquer or enamel formulator who developed the material originally, have little or no knowledge regarding the reason for water immersion resistance.

Actually there are two types of films that do exhibit excellent resistance to these water soaking tests. The most common (that is the basic principle often utilized by most finishers) is the use of a high solids, heavily built film which just seals off the substrate and acts as an impenetrable barrier. This heavy film prevents anything, particularly water, from getting through the film and destroying the interfacial adhesion between the base material and the organic coating.

The other variety of coating material is used extensively, but often it is not recognized. This is the coating that is a permeable or breather

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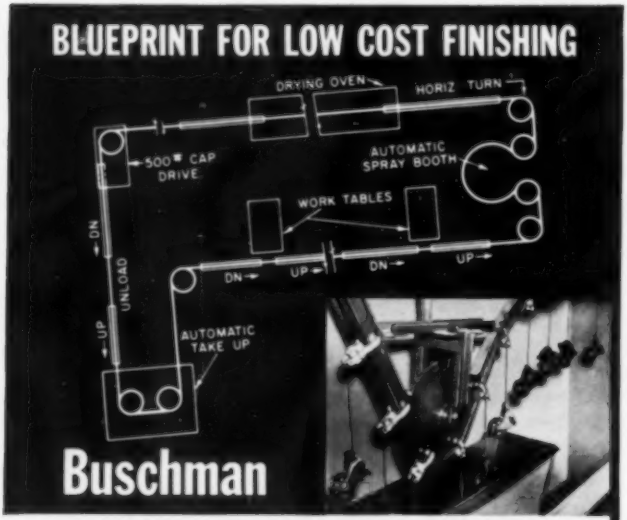

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type which permits moisture to penetrate, but which also allows it to escape without being trapped in the film and causing adhesion failure or substrate corrosion. Many types of fabric dopes fall within this classification.

Recently, consideration of these two variants came to the fore when it was discovered that many of the metal products made in the United States and exported to warm, moist humid climates of the tropics, were showing rust and corrosion beneath the lacquer and enamel films, while the surface coatings themselves appeared to be intact.

In the course of much discussion the theory was advanced that "sweating" of the metal surface under the paint was causing product deterioration. Organic films of the impervious type were trapping the moisture and preventing its escape. If this theory is shown later to be completely valid, it would mean that a primer of the zinc chromate type is recommended.

However, even though much has been written regarding the application of zinc chromate, there are still many finishers who persist in applying heavy films of primer. Chromate ions are an essential phase of this particular corrosion resisting material and best conditions are only developed with thin films. Of course, if the theory is valid, then a permeable or breather type top-coat would be called for. Thus the condensation from the sweating action would be permitted to escape without causing any harmful corrosion and deterioration underneath.

As has been seen during the past economic lull, exports to foreign countries are a vital necessity for busi-

ness health and stability. We as a people and we as finishers cannot afford a loss of prestige due to coating procedure failure. With an increase expected in export products, industrial finishers should be aware of the possibilities in order to prevent that decline of quality reputation in the eyes of the world.—*M.L.S.*

D. A. Kohr, 81, Dies

Donald A. Kohr, 81, retired board chairman of The Lowe Brothers Co., died Saturday, June 14, at the Miami Valley Hospital in Dayton, Ohio.

Crown Paint Corp. in New Plant At Hialeah, Florida

The Crown Paint Corp., formerly located in Miami, has expanded and now occupies a new modernly equipped plant in Hialeah, Florida, at 985 W. 20th St. The building is situated on three acres of land, with access to a railroad siding.

The physical plant represents an investment of $500,000 and employs 35 people. Last year the firm's gross business was just under $1,000,000.

All paint manufacturing processes—grinding, blending, milling, tinting and packaging—are conducted here, with special emphasis being placed on material for the Florida and Caribbean areas.

President of the firm is Harry Cantor who is also president of United Lacquer Mfg. Corp., Linden, N. J. General Manager is Julius E. Bearman.

Barrel-Finishing Catalog

An 8-page, 2-color, letterhead-size bulletin No. 158 describes the full line of "Lorco" equipment for precision barrel finishing. This includes conventional horizontal octagonal barrels in different capacities and the new Lorco vibrator.

Employing the concept of controlled vibration through variable frequency and amplitude, the vibrator will work from 10 to 100 times faster than the conventional tumbling barrel. Parts so delicate that they were damaged in tumbling barrels or slurry machines have been satisfactorily processed in the vibrator. Lord Chemical Corp., 2068 S. Queen St., York, Pennsylvania.

For more data, circle 33 on colored card.

Westinghouse Puts Air to Work

This is the title of a new booklet which covers the treatment and distribution of air, and the products which Westinghouse has available to do the job. The 32-page booklet is well illustrated and has sections on air handling, air conditioning, air heating, and electronic air cleaning.

For a copy of booklet D-5199, write Westinghouse Sturtevant Division, Department T-189, 200 Readville St., Hyde Park, Boston 36, Massachusetts.

For more data, circle 34 on colored card.

Allied Research Relocates

The Central District Sales Office of Allied Research Products, Inc., is now located at 400 Midland Ave., Detroit, Mich.; phone Tulsa 3-0100. This office was formerly located at 700 E. Atwater St. L. J. Camill is District Sales Manager.

Has 25,000-sq. ft. platform height and 5,000-sq. ft. of balcony; building is 20-ft. high inside.

Samsonite Products; Metal Plus Plastic

PLASTIC OR METAL? Many firms today feel that they have to choose between these materials as they design new products or update some of their standard lines.

Shwayder Brothers, Inc., manufacturer of "Samsonite" products, has another answer—combine them! The result: Attractive, durable furniture.

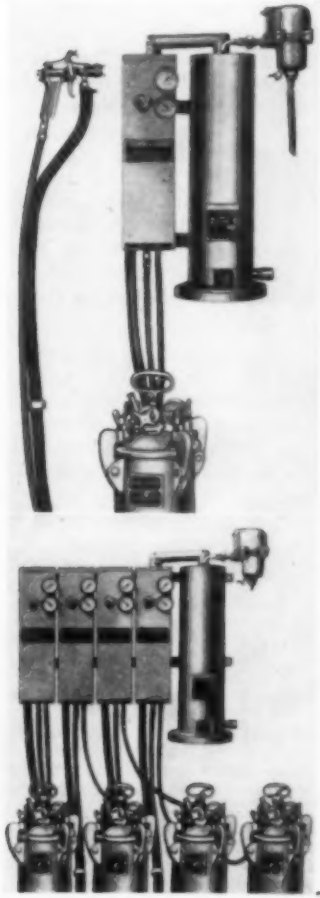
Vinyl clad metal sheets are produced in Shwayder Brothers' Detroit plant, and are used for making Samsonite tables and chairs.

Besides these finished products, the plant supplies sheets of vinyl clad steel, magnesium and aluminum to other manufacturers, as does the Shwayder plant in Denver, where vinyl clad magnesium Samsonite luggage is made.

Vinyl cladding, only recently perfected, was introduced on Samsonite lines last year. In bonding the thermoplastic vinyl resin to metal, a special adhesive, heat and pressure are used. The bond is so strong that it withstands draw pressures approaching the fracture point of the metal itself.

A critical requirement in effecting this bond is that the metal must be clean—really clean. A Bonderite installation cleans the metal and prepares the surface for the laminating process. The cycle includes the following: preclean, hot water rinse, Bonderize, cold water rinse, Parcolene rinse and dry.

How clean are the metal sheets after this treatment? An idea



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can be gained from the inspection they have to pass; they must show no residue when wiped with facial tissue!

Next comes a pass through a dual purpose roller coating machine, where the special adhesive is applied. After the sheet receives the vinyl film, heat and pressure complete the bonding operation. Later the laminated sheets make another pass through the roller coating machine, where paint is applied to the underside.

The finish sheet is now ready for forming. Table tops are blanked and drawn in a compound die. Chair seats are processed in a 5-press line, which draws, pinch-trims, pre curls, finish-curls and pierces them.

Once laminated to the metal, the vinyl picks up reinforcing strength and is actually less brittle than unbonded vinyl. The clad metal can be worked in a variety of ways in standard metal-working equipment, as long as the dies are kept completely clean. —*The Parkerizer, published by Parker Rust Proof Co.*

Poise means being balanced. The poised person is a balanced person—never ruffled, neither too loud nor too meek; always facing every situation with coolness.

Barrel Finishing Methods

A new 24-page, 4-color catalog on precision metal finishing by mechanical barrel-finishing methods is now off the press.

Released by Roto-Finish Co., Kalamazoo, Mich., the new book sets forth a clear explanation of mechanical finishing processes. The story of how Roto-Finishing is applied to the grinding, deburring, descaling, polishing, and coloring of metal parts contains special information for process engineers, answering the basic questions to the problem of achieving large-quantity production runs while maintaining exact tolerances and uniformity of finish.

For more data, circle 35 on colored card.

Prevent Rust Without Coating Surfaces

DO YOU have a rust problem? Many firms store their castings, formed steel parts and even sub-assemblies in a parts stockroom from which the parts are taken out to complete specific orders. Since the modern trend is toward using several different colors on products, the parts stockroom has become increasingly popular. Some of the parts may remain in storage only a few hours; others may be stored for several days or even weeks.

It is during this storage period that rust is likely to develop. Various corrective measures have been used, some of them with fair success. Some firms spray the parts with a light oil, but this method later calls for a thorough cleaning in a vapor degreaser, a multi-stage power washer or in a burn-off oven before the parts can be painted.

Another rust preventive method is to run the parts through a power washer and phosphatizing machine to apply a moderately heavy phosphate coating. This surface treatment offers some protection against rust while the parts are in storage, but extreme care must be used in handling and storage to avoid scratching or marring the phosphate coating. Finger printing must also be avoided; otherwise the parts will have to be run through the power washer and dry-off oven before they are painted.

It is always possible, of course, to prime coat the parts in a neutral

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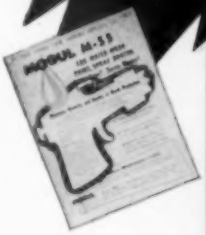
Case History reports that prove MOGUL M-55 can save you money . . . $



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Cleveland 13, Ohio

. . . Write for literature and actual case history reports on results.

NEW... MOGUL M-55 liquid treatment for water wash paint spray booths is SAFE to use, will not harm personnel. Provides an excellent paint blanket . . . protects equipment and keeps your water circulation system at top operating efficiency. A 60 day trial offer will prove MOGUL M-55 results in your own operations.

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JUST THE WAY YOU WANT IT!

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There's a big difference in TACK-CLOTHS—that's why BOND processes four different meshes of cloth with several types of formulations to give you the cloth that best "fits" your special needs. You can get BOND TACK CLOTH packed just the way that suits you best, too—in 150 yard Rolls of 36" wide cloth or in handy Cartons.

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A WARRANTY OF SATISFACTION IN EVERY CARTON

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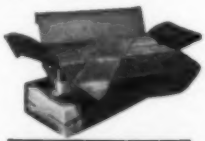

IN BULK

Size is 18" x 36"—folded to 4-½ x 18" or 9" x 18" for ease of handling. Cut and folded—ready to use.

Also Individually Packed in Glassine Envelopes — 144 to the carton.

"The Tacky Wiper Specialist"

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color. This is a sure way to prevent rust, but for some products this prime coating represents a prohibitive cost. Then there are various solutions available to remove rust spots on metal surfaces just before painting.

Any one of the corrective measures just mentioned may serve the purpose, but perhaps the best method is to go all the way back to the cause of rust. *Remove the cause and there will be no rust.* The research laboratories of Trane Co. at LaCrosse, Wisc., have come up with the principle of pinpoint humidity control to effect substantial economies in stock steel storage. Moisture in the air causes rust to form. It has been found that with the storage area controlled through air conditioning at 35% or less relative humidity, the raw steel parts can be stocked indefinitely without rusting. It's something to think about.—*W.C.*

New Hot Spray Booklet

The Spee-Flo Co. has published a new and completely revised edition of its booklet "Why Hot Spray?" The 28-page booklet explains the theory of the hot spray process and features case history photographs and stories of the results obtained with hot spray in metal-working and furniture manufacturing plants, and in maintenance and fabrication.

The booklet also contains pictures and information on the complete Spee-Flo line of spray equipment including the HydraAirless unit, which involves spraying without atomizing air.

A copy of the booklet may be obtained by writing the Spee-Flo Co., 6614 Harrisburg Blvd., Houston 11, Texas.

For more data, circle 36 on colored card.

Resins for Urethane Foam

New facilities for the production of the Pittsburgh Plate Glass Co.'s recently introduced line of polyester resins for urethane foam have been placed in operation at the Ditzler Color Division of the company at Detroit, Michigan.

Spray Booths Move Past the Product

TRAVELING spray booths have long been used by railroads for painting passenger and freight cars. The car remains stationary while the spray booth travels over rails embedded in a concrete floor for the length of the car. These power driven traveling dry-filter-type and water-wash booths are complete self contained units with all the accoutrements of a stationary booth—plus mobility. They operate on a variable speed drive. Movement of the booth can be stopped by either spray operator or, if automatic, its travel may be regulated by remote control.

If manual spraying is desired, these booths can be constructed for either one or two operators on each side. Also they may be equipped with power-driven elevator platforms for both high and low level spraying.

For fully automatic operation, these booths may be fitted with both horizontal and vertical contour spray units. The transverse unit is used for painting the top of the car or bus or truck, while the two vertical units (one on each side) paint the sides and top reveal. Action of the spray guns is mechanically controlled and the movement of the booth is by remote control.

The popularity of the traveling spray booth, whether for manual or automatic spray painting, is increasing as more manufacturers of large equipment recognize the advantages of moving a comparatively

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3. You'll find that in most cases Delavan delivers from stock. On nozzles most commonly used in metal cleaning or finishing applications, large inventories are carried in a wide range of sizes and in a variety of materials.
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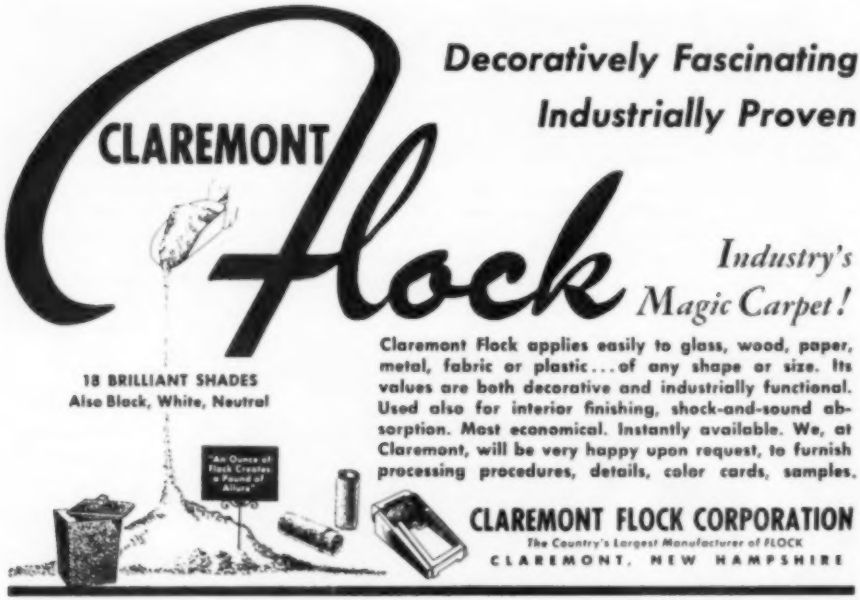
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Claremont Flock applies easily to glass, wood, paper, metal, fabric or plastic...of any shape or size. Its values are both decorative and industrially functional. Used also for interior finishing, shock-and-sound absorption. Most economical. Instantly available. We, at Claremont, will be very happy upon request, to furnish processing procedures, details, color cards, samples.
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small spray booth over their product instead of moving a big bulky product through a necessarily large spray booth.

The traveling spray booth is adapted to spray painting railroad cars, busses, trailer trucks, house trailers, aircraft and certain other large size equipment.—*P.C.B.*

New Wrinkle Finishes Such as Vinyl Types, Etc.

FOR MANY YEARS wrinkle finishes have been well known in the metal finishing world for their decorative and protective values. These finishes continue in their popularity and the uses for them are many and varied despite the growth in favor of some other types of metal finishes.

Vehicles used in the formulation of wrinkle paints have changed remarkably since the earliest days of metal decorating—in about the same manner as the whole protective coating industry has progressed. The earliest vehicles used in wrinkle paints were of the natural resin or fossil gum varnish type. These early products still find some favor in industry for specified types of wrinkle finishes.

Other synthetic resins such as alkyds, when properly formulated, have gradually replaced more and more of the earlier wrinkle vehicles.

Users of wrinkle finishes may have followed these changes or trends more by noting the corresponding changes in the thinners or volatile solvents used. These have involved the aliphatic or petroleum type solvents of various volatilities and the aromatic or coal-tar types, all of which are more commonly called hydrocarbon types.

Of more recent interest are the so-called oxygenated type solvents such as alcohols, ketones, esters and, at

times, even water. These solvents have been necessary to use in the vinyl wrinkle compositions which have found increasing favor because of abrasion resistance, toughness and wearability. Reference can be made to New Wrinkle patent No. 2,536,049, where we quote as follows: "As to solvents, those are preferred which have a high evaporation rate. For instance, methyl ethyl ketone, acetone, butyl acetate, cyclohexanone, xylol, toluol, toluol together with nitroparaffin, and amyl acetate are found to be highly satisfactory."

We now have 17 patents on wrinkle finishes in which we use or recommend the use of oxygenated solvents. —*New Wrinkle, Inc.*

J. J. Basch; Oakite Products

J. Justin Basch has been appointed to marketing vice president of Oakite Products, Inc. Mr. Basch, formerly V. P. for research and product development, is now responsible for sales, engineering, advertising, and marketing research.

Can You Match Colors . . . . ?

"Can You Match Colors over the phone, or by mail?" is the title of a new 4-page brochure published by the Macbeth Daylighting Corp., P. O. Box 950, Newburgh, N. Y. Designed to point out the many advantages of standardized lighting for color viewing, between customer and plant, within the plant and between plants, the brochure tells a graphic story of the savings possible, in both time and money, through such lighting standardization. The brochure also shows the spectral energy curves (color composition) of both the examolite and Macbeth filtered daylight equipment, the closest duplication of north sky daylight ever produced in a commercial fixture, for your inspection and comparison.

If you have a color matching or color evaluation or inspection problem and would like to reduce costly color matching errors and rejects, send for this easy-to-read booklet. Ask for bulletin No. 283, "Can You Match Colors over the Phone or by Mail?"

For more data, circle 122 on colored card.

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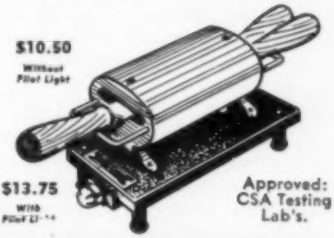

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Conveyor Wheel Lubricator

Newly-designed, air-actuated, automatic trolly wheel lubricator which provides positive lubrication to every wheel on both sides to the conveyor track without stopping the production line, is announced by the Alemite Division of Stewart-Warner Corp., 1850 Diversey Parkway, Chicago 14.

Just open the air valve and air-energized couplers engage the passing trolly wheels to deliver an exact, measured amount of lubricant to each wheel. Wheels can be spaced yards apart, can be irregular in spacing, or may be as close as 6-in. on centers.

For more data, circle 1 on colored card.

Fish Eye Eliminator Perfected

An additive for all lacquers and enamels that eliminates fish-eyes and cratering in touch-up, panel repair and complete refinish jobs, is being introduced by the Du Pont Co.'s Finishes Division.

Called Du Pont Fish Eye Eliminator, it is a crystal clear material, packed in capsules. Each capsule contains a measured quantity sufficient for one pint of thinned paint. Fifty capsules are packaged in a transparent plastic re-usable container.

In using the new product, painters are instructed to first clean the surface with Du Pont 3919 New Prep-Sol. Next, sand the old finish and apply recommended undercoats. Then, snip tip off capsule and squeeze entire contents into thinned color topcoat paint at the rate of one to a pint. Stir thoroughly.

In using fish eye eliminator, the material must be added to all color topcoat paints.

For more data, circle 2 on colored card.

New Reverse Current Cleaner

Composition No. 190—the new reverse current cleaner—is now offered by Oakite Products, Inc., 32F Rector St., New York 6. N. Y., manufacturer of cleaning and metal treating compounds. This new composition is effective for cleaning heavily smutted steel. It also removes fingerprints, light surface rust and oxides resulting from spot or seam welding.

The material is used at concentrations of from 8-oz. to 16-oz. per gallon of water, at temperatures ranging from 180° to 200°F., with reverse current from 40 to 100-amps. per square foot. It may be used with or without a precleaner. It rinses well in hot or cold water.

For more data, circle 3 on colored card.

Aluminum Protective Coating Contains Rust Inhibitors

A new aluminum pigmented liquid coating, that is loaded with potent rust inhibitors and provides long term protection against rust and corrosion under severe exposures in marine and industrial atmospheres, has been developed at Gulf Oil Co.'s Philadelphia laboratory.

The new product, Gulf Metalcoat-A, provided four years of satisfactory protection in a salt spray and marine atmosphere test at a commercial testing station. This is the equivalent of seven to ten times greater protection than that afforded by similar products.

The product can be applied to either rough or polished surfaces and the surfaces do not have to be entirely rust-free. It is unaffected by temperature changes. In consistency, Gulf Metalcoat-A is similar to heavily pigmented aluminum paint and can be applied by brush, roller, spray or by dipping.

For more information write to Gulf Oil Corp., Dept. DM, P. O. Box 1166, Pittsburgh 30, Penna.

For more data, circle 4 on colored card.

Air Filter & Water Separator

An extra large capacity air filter and water separator designed to remove all dirt, scale and moisture from both line air and regulated air for paint spray operations is now available.

Assures clean dry compressed air at guns.

Special features of this unit include two regulated air valves that permit use of two spray guns operating on different pressure settings. Line air pressure is also available through two additional valves. Permanent, porous bronze filter traps all foreign particles.

Two air powered pumps and two spray guns are easily supplied with clean, dry air by one of these air filters, eliminating the need for separate filter for each pump and spray gun.

For additional information, write for Bulletin 304-913, Gray Co., Inc., 1005 Sibley St., N.E., Minneapolis 13, Minn.

For more data, circle 5 on colored card.

Cleans Paint Off Your Hands

A new and effective compound for removing paint, lacquer, adhesives and other resinous products from the hands is announced by the Mark Kevin Co., 6651 Washington Ave., University City 5, Mo.

Mar-Kev Hand Cleaning Compound thoroughly dissolves away pigmented and resinous substances, and at the same time protects the skin by reason of its lanolin content.

For more data, circle 6 on colored card.

Upright Washing Machine Saves Floor Space

A new Ransohoff Vertical Type Washing Machine makes the most of every available inch of valuable floor space by utilizing the space directly above the base of the machine to the fullest extent.

Compared to a conventional horizontal conveyor type washing machine occupying 44 sq. ft. of floor space, this vertical type requires only 16 sq. ft. Additional savings can be realized from automatic operation

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automatic mask, label and tape dispenser
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which frees manpower for other jobs, increased production and improved cleaning quality which eliminates rejects.

This machine is designed and built for a long life of trouble-free operation. Overall dimensions are 4 feet wide by 4 feet long by 11 feet high. The production rate is 2000 pieces per hour. The solution tank is heated by removable steam plate coils.

Further information and details about this Vertical Conveyor type Washing Machine may be obtained by writing directly to the manufacturer: Ransohoff, Inc., North Fifth St. and Ford Blvd., Hamilton, Ohio.

For more data, circle 7 on colored card.

Aluminum Repair Putty

Devcon "F" is a combination of aluminum putty and a plastic hardner paste for filling dents, deep scratches and holes. It is made by Devcon Corp., Danvers, Mass.

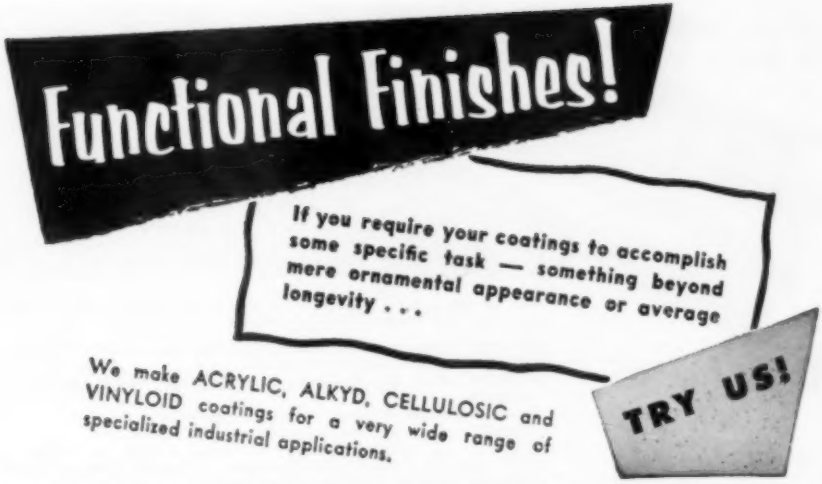
This repair putty is easily applied where needed and can be readily smoothed. Within three hours, it hardens into a solid rigid piece of metal which can be filed down to the contour of the surface, blending in with the aluminum color. The weight is so slight that it is negligible.

For more data, circle 8 on colored card.

Cleans and Phosphates Metal in Three Stages

Development of a new material for cleaning and lightly phosphating iron, steel or zinc in three simple stages, is announced by Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif. Called Turcoat 4185, the new product assures paint adhesion and prevents rapid re-rusting of steel prior to painting.

Designed for use on steel compon-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If you require your coatings to accomplish some specific task — something beyond mere ornamental appearance or average longevity . . .
We make ACRYLIC, ALKYD, CELLULOSIC and VINYLOID coatings for a very wide range of specialized industrial applications.
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ents, such as cabinets, lockers, heaters, structural parts, furniture, automotive trim, etc., Turcoat 4185 meets salt spray and paint adhesion requirements.

Easily applied by either spray or dip, the new material deposits a very smooth phosphate coating of up to 70 miligrams per square foot on steel. The coating provided is a phosphate of the metal to which the material is applied, that is, iron phosphate or zinc phosphate.

For more data, circle 9 on colored card.

Modifier for Epoxy Resins

A new modifier for liquid epoxy resin systems which offers both improved end properties and substantial savings in formulating costs has been announced by Monsanto Chemical Co.'s Organic Chemicals Division, St. Louis 24, Mo.

Trademarked Mod-Epox, the material is reported to impart a low initial viscosity, accelerate the rate of cure and maintain or improve the physical and electrical properties of the finished resins while cutting their cost by 20% and more.

For more data, circle 10 on colored card.

Water Dip Lacquer For Silver Plated Parts

A special water dip lacquer for silver plated parts, Sealbrite No. 244, is applied directly after electro-plating or chemical cleaning operations. It instantly displaces water, protects silver surfaces against oxides, sulfides, discolorations, etc., and greatly enhances solderability of contacts, terminals, lugs, eyelets, printed circuits, etc.

For further information contact London Chemical Co., Inc. Dept. IFI, 1535 N. 31st Ave., Melrose Park, Ill.

For more data, circle 11 on colored card.

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GRANCO has original ideas, initiative, ability to design and install any size, shape or style system—whether it be convection, radiation, radiant tube or otherwise.

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Write for Bulletin

GRANCO INC. 317 32nd Street, S.W. • Grand Rapids 8, Michigan

New Resin for Baked Finishes; High Gloss With Fast Cure

A new melamine formaldehyde resin, Uformite MM-57, provides exceptional gloss and speed of cure in baking enamels for automotive use, appliances and metal finishing. The new resin gives finishes excellent gloss retention, hardness, and mar resistance with superior color and color retention even at high baking schedules. Very good alkali and soap resistance, and outstanding adhesion are other characteristics of this new product.

Aromatic, and some aliphatic solvents may be used for the reduction of baking enamels containing Uformite MM-57.

Several formulations for baking enamels have been developed for use on metal products where curing speed, gloss retention, heat resistance, and film hardness are essential.

Uformite MM-57 is available in commercial quantities from Resinous Products Division, Rohm & Haas Co., Washington Square, Philadelphia 5.

For more data, circle 12 on colored card.

Portable Blast Cleaners

Brennen, Bucci & Weber, Inc., 262 Mott St., New York 12, N. Y., announces a line of portable blasting machines. Bren-Weld blast cleaners will remove paint, rust, dirt, welding scale or other foreign matter from hard surfaces. The machines operate with a working air pressure from 30-lbs. to 120-lbs. per square inch, all depending upon the type of surface being blasted.

For more data, circle 13 on colored card.

Stripper Removes it Fast

All types of varnish, regardless of toughness and thickness of coating, can be stripped quickly and easily with a non-flammable impregnated varnish remover developed by London Chemical Co., Dept. IFI, 1535 N. 31st Ave., Melrose Park, Ill.

It works equally well with air-dried or baked varnishes, regardless of baking temperature and is economical to use, because of its quick action and the surface seal which prevents evaporation of the stripping power. It can be applied by either brush or dip. **For more data, circle 14 on colored card.**

Protect Paint Booth Walls With Strip Coat

Magnus Strip Coat SC100 dries in minutes, forming a white opaque film which can later be peeled easily from the surface. It is widly used in paint spray booths for improving illumination and as an inexpensive, effective method of removing overspray which accumulates on walls.

Magnus Strip Coat is non-toxic, for it contains no chlorinated solvents, and has a solid content of 30%. It

Peels off in sheets; is non-combustible when dry; has 30% solids; is non-toxic.

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Recommended for all metal surfaces including aluminum. No etching or priming required.

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- Air-Dried or Baked.
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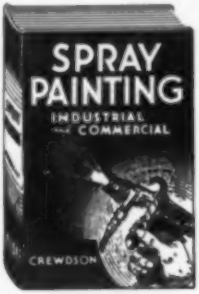

This new book covers the fundamental principles of spraying technique, together with the latest developments and practices of this craft. Covers common paint pigments, paint extenders, enamels, oil and spirit varnishes, shellac, lacquer, synthetics, all types of modern air guns, spraying technique, spraying standard materials, spraying defects, their cause and remedy, flock and suede finishes, striping and lettering, pearl lacquer finish, also automatic spraying, electrostatic spraying, agricultural spraying and automobile spraying. Ends with the sprayers "Ten Commandments."

INDUSTRIAL FINISHING
1142 N. Meridian St. Indianapolis 4, Ind.

can be applied by spray or brush, covers 200 to 300-sq.ft. per gallon and dries in ten minutes. No thinner is needed when this material is applied by pressure spraying equipment.

For more information about Magnus Strip Coat SC100, write to the Finishes & Coating Division of the Magnus Chemical Co., South Ave., Garwood, N. J., Dept. I.F.

For more data, circle 15 on colored card.

Bright Brass-Colored Finish

A finishing system based on Bakelite epoxy resin can turn parts fabricated from ordinary sheet metal and die castings into lustrous, decorative pieces. The coating system developed by Rexton Finishes, Inc., 62 Woolsey St., Irvington 11, N. J., produces an attractive brass colored finish that is highly resistant to scratching, peeling, discoloration, dulling or tarnishing. This finish adheres tightly to either metallic or plastic surfaces, including properly prepared zinc and aluminum die castings.

First, a clear liquid epoxy formulation is sprayed on the metal substrate. Then a brass slurry is sprayed on the wet surface. After the slurry is cured, a clear top coat based on Bakelite epoxy resins is sprayed on. The coating cures quickly to a tough, hard surface.

For more data, circle 16 on colored card.

Peel-Off Protective Coating

A liquid plastic that can be applied by spraying, brushing or dipping on any non-porous material, such as metal, is offered by Harco Chemical Co., Cranford, N. J.

The film, when dry, is non-flammable and it is a moisture barrier. Coated surfaces are protected against the corrosive effects of chemicals and

FICTION and FACT

FICTION: Paint Overspray Control Requires Complicated and Expensive Maintenance Procedure.

FACT: An R P Paint Arrestor Equipped Booth Can Be Changed In Minutes By Inexperienced Personnel.

RP PAINT ARRESTORS

Photo Courtesy Burnaby Blinds Ltd., Winnipeg, Canada

Inexpensive R P Paint Arrestors are easily replaced in a short time to provide like-new paint overspray removal efficiency, with minimum down-time, at a fraction of usual maintenance costs. Economical original installation, too—and adaptable to almost every type operation, R P Paint Arrestors can cut costs, increase production in your booths, too. Write for information.

RESEARCH PRODUCTS *Corporation*
Dept. 34, Madison 10, Wis.

chemical fumes, extreme weather conditions in outside storage, and abrasion.

The protected object can be immediately restored to use without further cleaning or preparation by simply peeling off the plastic coating. There is no oily residue or any type of contamination.

Field tests have shown the coating will last up to three years, depending upon the thickness of the original coat.

For more data, circle 17 on colored card.

Large Ultrasonic Cleaner

A recent addition to the line of standard ultrasonic cleaning equipment offered by Acoustica Associates Inc., Dept. 125, 26 Windsor Ave., Mineola, L. I., N. Y., is the 150 gallon capacity DR-2000 AH system. The unit features a cleaning tank 3-ft. square by 2½-ft. deep, fitted with 20 bottom mounted transducers. These are driven by a pulsed electronic generator delivering 8,000 watts peak power. Either solvent or water detergent solutions can be used.

For more data, circle 18 on colored card.

Portable "Drum" Degreaser

The Manpro Bar-L vapor degreaser's smooth exterior and thin front-to-rear dimension permits the use of any standard steel drum for on the metal cleaning job. As a production unit it has a 700-lb. per hour capacity for small metal parts. It can be moved to any location, plugged in to an electric outlet, and will clean a variety of small metal parts.

For more information, write Manpro Corp., 1398 Hilton Rd., Detroit 20, Michigan.

For more data, circle 19 on colored card.

Cleans Compressed Air

Here is the "Wilk-O-Matic" moisture separator for use in compressed air lines, to clean the air of moisture, oil, dirt, etc.

Moisture and other contaminants are collected and automatically discharged at each cycle of any air-operated equipment. The unit needs no drain connection, since the contamination, due to pressure, is "fogged" to atmosphere; it is specifically designed for the intermittent-flow type of air operation.

This unit is a product of Wilkerson Corp., 1627 W. Girard Ave., Englewood, Colorado.

For more data, circle 20 on colored card.

Polishing, Buffing Machine

Murray Way Corp., P. O. Box 180, Birmingham, Mich., announces the Junior automatic and buffing machine. It has horizontal and vertical work spindles and a full line of supplementary equipment which can be added as needed to produce versatile automatic operation.

For more data, circle 21 on colored card.

Renewable Media Air Filter

A newly designed Roll-O-Matic automatic renewable media air filter is announced by American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky.

Features of this Model B include stronger reinforced media and an adhesive which will not "run" in high temperatures, thicken in low temperatures, nor lose its adhesive qualities due to dryness. The Roll-O-Matic is available in vertical sections of different widths and heights. The used media, with its accumulated dust load is tightly re-wound on the bottom of the spool for easy disposal.

For more data, circle 22 on colored card.

Rust and Tarnish Remover

Rustclean 154 chemically cleans the surfaces of iron and steel, removes the tarnish from copper and brass, and brightens aluminum and stainless steel without harm to the metal itself.

Light oils and grease films from stamping and other fabricating operations are dissolved by the solvents and detergents in this cleaner. It has good corrosion resistance for treated metal surfaces, and also acts as a pre-painting treatment. It is suitable for either hot or cold immersion. Rustclean is a product of Octagon Process, Inc., 34 Bank St., Staten Island 1, N. Y.

For more data, circle 23 on colored card.

Conveyorized Paint Stripping

A conveyorized paint stripping system, incorporating the Kolene molten salt bath process, makes it possible to strip paint from hooks and racks when required, without any tie-up of the paint production line. Designed and manufactured to customer specifications by Kolene Corp., of 12890 Westwood, Detroit 23, Michigan, the system features automatic, adjustable time cycling. This enables one man to both load and unload, at the same station, paint-laden hooks and racks from multiple conveyor lines. Stripping time averages one to three minutes, and time cycling has the further advantage of eliminating the human factor, assuring high work output.

For more data, circle 24 on colored card.

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July, 1958, Issue

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Complete Paint Finishing Systems, such as flow coating, dip coating or automatic spraying, metal cleaning and phosphatizing equipment, baking ovens, air replacement system and conveyors can be engineered and installed by The Spra-Con Co., 3600 Elston Ave., Chicago 18, Ill. The Spra-Con catalog illustrates and describes many installations of complete paint finishing systems.

For more data, circle 37 on colored card.

Perfex Satin Finishes, the original "flat" made by a new and different process, without the use of stearates or other flattening agents, have cut the dust-free time, increased print resistance, increased body and build, improved clarity and color .... all of which combines to produce a wonderful rubbed finish effect appearance and a pleasant waxed effect feel. Available in a full range of sheens to produce the exact rubbed effect and waxed feel desired. Perfection Paint & Color Co., Indianapolis 2, Indiana.

For more data, circle 38 on colored card.

Hi-Sol Enamel Reducer offers such merits as less "orange peel," high gloss and excellent hiding, superior flow, resistance to sagging, quick initial set, smooth finish. Potter Paint Co., Cortland 1, N. Y., and Cambridge City 1, Indiana.

For more data, circle 39 on colored card.

Half-Second Butyrate lacquers give outdoor aluminum maximum protection. Is clear, non-yellowing, weather-resistant. This tough finish will protect the surface for long periods and the action of rain alone will remove the accumulation of most dirt and grime. Easy to apply, economical to use, excellent protection in one coat. Eastman Chemical Products, Inc., 260 Madison Ave., New York 16.

For more data, circle 40 on colored card.

Agateen Clears assure beauty, quality, good appearance and protection. Don't gamble with the sale of your products at the retail level. Investigate Agateen clear lacquers, air dry and semi-bake lacquer enamels and baking lacquers. Agate Lacquer Mfg. Co., Inc., Long Island City, New York.

For more data, circle 41 on colored card.

Guardsman Finishes and Cleaning Polish, products of Grand Rapids Varnish Corp., Grand Rapids, Michigan, provide an excellent final finish on your metal office furniture, and enhance the sales appeal of the finished product. Guardsman finishes are also available for interior decoration.

For more data, circle 42 on colored card.

BFC Chromic Acid (flake) is now available from Better Finishes & Coatings, Inc., 268 Doremus Ave., Newark 5, N. J. Every batch is checked, and every can filled with a full weight of extra-high quality Chromic Acid. Prompt delivery, from ample factory and nearby distributor stocks.

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Insured Finishes by the drum or carload. Finishes for application by spraying, brushing, dipping or flow coating, air-dry or baking. Spruance's 52 years of experience can help you select the right finish for your product. The Gilbert Spruance Co., Philadelphia 34, Penna.

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Paint Strainers for straining lacquers, enamels, paints or varnishes. Made of heavy paper stock with cloth inserts in coarse, medium, fine and extra fine mesh, 6-in. in diameter. Louis M. Gerson Co., Box 175A, Mattapan, Mass.

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Ideal Tack Rags are used prior to painting, to wipe off and hold dust, dirt, sand particles and lint too small to see, but which might leave a blemish or defect on the final coat of paint or finish. Ideal Chemical Co., 1499 Dean Drive, South Euclid 21, Ohio.

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Satin Finish Wooling Lacquers are ideal for use where a satin sheen finish with a smooth, silky feel is desired, without requiring a costly rubbing operation. Available in water white light resistant, for use on white or pastel finishes, or in regular lacquers for darker shades such as mahogany, walnut, etc. Made by The Lawrence-McFadden Co., 7430 State Rd., Philadelphia 36, Penna.

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Performance Proved Spray Nozzles can lower your costs in washing, coating and rinsing. Have adjustable joints for quickly setting each spray to fit the work. Write for free catalog No. 24. Spraying Systems Co., 3240 Randolph St., Bellwood, Illinois.

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Roller Coating Specialists and manufacturers of Epoxy lacquers, enamels and vinyls. Better research, quality and service to users of industrial finishes. Gordon Bartels Co., Rockford, Illinois.

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Multicolor One-Coat Finish called "Spex" is featured by V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39, Ill. Provides a combination of two or more distinct contrast or harmonizing colors in one coat with standard spray equipment. Hides all surface irregularities. Suitable for finishing wood, metal, plastic, brick, concrete and all types of composition board. Dries like lacquer. Available in a great number of attractive stock colors. Color card available.

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Unichrome Coating 6400 gives a rich texture of morocco leather in a sprayed vinyl finish. Produces a flexible, chip-proof mar-resistant finish which withstands corrosion. Metal & Thermit Corp., Rahway, New Jersey.

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Steinemann Pressure Curtain Coater gives fast, economical and uniform coverage. Clear and pigmented lacquers, varnishes, polyesters or synthetics can be applied to smooth or irregular shaped surfaces. With strict controls over pressure, speed and viscosity, this coater produces a uniform coating. No spray, splash or waste. Excess material is returned to reservoir for reuse. Applies coatings of .5 to 100.0 mil in thickness. Bulletin SIF-5 gives complete information. George Koch Sons, Inc., Evansville 4, Indiana.

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Burn-in Tools for making quick and skillful repairs to nicked, dented or scratched finishes. The Op-Al Electric & Mfg. Co., 3135 Martindale Ave., Indianapolis 5, Ind.

For more data, circle 55 on colored card.

Acrylic, Alkyd, Vinyloid coatings for a wide range of special jobs, are offered by The Varnish Products Co., 5206 Harvard Ave., Cleveland 5, Ohio.

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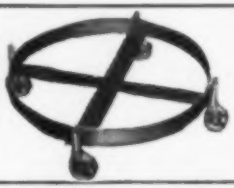

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DeBurgh Finishing System represents an investment which returns its entire cost in less than 24 months, and pays a like amount into your net profit column throughout the years, according to the manufacturer, DeBurgh Conveyors, Inc., 10 S. Eleventh Ave., Evansville 4, Ind. Booklet sent upon request. Free engineering analysis available.

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Lighting Fixture Finishes; lacquers and synthetics, air dry and bake, transparent and enamels; excellent adhesion, marproofness and durability. G. J. Nikolas & Co., 2850 Washingtin Blvd., Bellwood, Illinois.

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Drum Dolly. A steel X-frame within a circle steel band and mounted on 4 swivel casters will take upright drums weighing as much as 700-lbs. Makes the load easy to move. Morse Mfg. Co., Inc., 763 W. Manlius St., E. Syracuse, N. Y.

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Cabinet Lacquer, 27% solids, cold spray; alcohol resistant; rubs, polishes to desired sheen; resistant to cold check. Specify sheen desired when writing for more detailed information to Barrett Varnish Co., 1532 S. 50th Court, Cicero 50, Illinios.

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Airless Spray Coating minimizes overspray problems, reduces health and fire-hazards, cuts maintenance and clean-up costs, saves paint, time and labor and reduces auxiliary painting equipment requirements. Above these advantages a better finished product is the final result. Write Nordson Corp., Amherst, Ohio, for the Airless Spray Painting brochure.

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"Hammercote" Finishes by Tousey Varnish Co., 520 W. 25th St., Chicago 16, Ill., allow for production touch-up without discoloration. No longer necessary to completely refinish painted pieces that have become scratched or gouged in production. Damaged place can be sprayed with Hammercote, rebaked and the newly patched area will match the twice-baked part so closely it would take an expert to see the difference.

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"Mogul M-55" Liquid Treatment for water-wash paint spray booths is safe to use, will not harm personnel. Provides an excellent paint blanket and protects equipment. Keeps your water circulation system at top operating efficiency. 60-day trial offer will prove Mogul M-55 results in your operations. The North American Mogul Products Co., Standard Building, Cleveland 13, Ohio.

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Tack Cloth for Wiping Dust. It's available in different meshes, in envelopes, rolls or bulk. Lint free, wax free; no danger of spontaneous combustion. Bond Chemical Products Co., 2641 N. Clybourn Ave., Chicago 14, Ill.

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"Multakolor" Paints in two or more colors can be sprayed in one coat, with one gun from one container. Dries in 15 minutes to touch; can be handled in one hour. Resistant to alcohol, grease, oil and inks. Excellent for hiding small imperfections. Stock colors can be intermixed to obtain many interesting patterns. United Lacquer Mfg. Corp., 1001 W. Elizabeth Ave., Linden, N. J.
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RP Paint Arrestors can cut costs, increase production in spray booths and reduce maintenance costs. Paint Arrestors are easily replaced in a short time and provide like-new paint overspray removal efficiency with minimum down-time. RP Paint Arrestors are adaptable to almost every operation, and economical in original installation. Research Products Corporation, Madison 10, Wis.
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"New Period" Finishes for both wood and metal are better looking, longer lasting and easier to apply. Filters, stains, lacquers, sealers, lacquer enamels and synthetic enamels are among the New Period finishes available. Working samples at drum price are available. New York Woodfinishers' Supply Co., Inc., 109 Imlay St., Brooklyn, N. Y.
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Metal Cleaners for any job on metal, aluminum, magnesium, steel, copper, etc., can be obtained from Oakite Products, Inc., 32F Rector St., New York 6, N. Y. Free booklet entitled, "Cleaning and Preparing Metal in Aircraft Production" is available upon request.
For more data, circle 70 on colored card.

Our Paint Stripping Clinic can save you money. Our Epoxystrip, Econostrip and other paint remover formulations can solve your stripping problems. Send us several parts and give us essential information; we will give you a prompt report. No obligation. Beck Equipment Co., 3350 W. 137th St., Cleveland 11, O.
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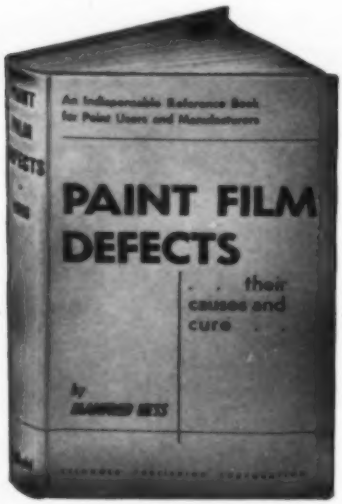

HERE ARE enumerated in this remarkably valuable book of 544 pages, all of the common nad a variety of unusual and seldom heard-of defects and objectionable features that occur in paint, varnish, lacquer and synthetic enamel finishes; their probable, possible or real causes given; the effects described, and means of preventing and remedying these troubles fully outlined.

Chapters deal with these defects and troubles as they occur, 1) during or as a result of storage and preparation of materials before finishing; 2) when the materials are applied by various production methods and equipment, 3) during handling, processing or drying after application; and finally, 4) when and after the finished goods are shipped, displayed, stored or placed in service.

Defects covered include many more than could be named here, but to mention just a few there are; runs, sags, tackiness, films, too thin or too thick, slow drying, orange peel, alligatoring, wrinkling, pimples in films, pinholing, cracking, blistering lifting, bleeding, blushing, blooming, discoloration, rainbow effects, gloss and dull areas, grained appearance, and scores others.

Practical information is also revealed in reference to safety precautions to prevent fires or accidents in paint shops and finishing rooms, skin troubles of workmen, poison from paint materials and fumes.

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For more data, circle 72 on colored card.

Spray Mask Painting Machines, spray mask washing machines, finishing equipment and custom units for special finishing, as well as spray masks, jigs and fixtures, are supplied by Thierica Studio, 900 Clancy, N.E., Grand Rapids 5, Mich. Send part, print or sample, and special attention will be given to your particular masking or finishing problem. Special masks and special tooling can be designed for your product.

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"Vitrilon" thermosetting acrylic finish resists detergents, abrasion, soaps, food and drug staining, light and heat. The right finish for home laundry and dishwashing appliances. Has excellent gloss and color retention on exposure to light. Produce whites that stay white. Bulletin IC. gives the complete story. Interchemical Corp., Finishes Divn., 224 McWhorter St., Newark 5, N. J.

For more data, circle 74 on colored card.

Ransburg's No. 2 Process helps maintain high-quality standards. This process has been used effectively on electric food mixers, gasoline pumps, etc. Ransburg services, including the test painting of your products in our laboratories, are available to any manufacturer whose production justifies conveyorized painting. Ransburg Electro-Coating Corp., Indianapolis 2, Ind.

For more data, circle 75 on colored card.

Irradiant Grid Gas Burner is especially designed by Granco, Inc., 317 32nd St., S. W., Grand Rapids 8, Mich., for curing and baking enamel finishes. It can also be used in burn-off ovens and in dry-off ovens which follow power washers. It produces radiant heat through means of an open retort refractory.

For more data, circle 76 on colored card.

Lacqers, NGR Stains, and everything used for finishing fine furniture, cabinets, pianos, etc., plus styling and technical service—in Southeast U. S. A. Snyder Brothers Co., P. O. Box 631, Toccoa, Ga.

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PROTECT EYES AGAINST PAINT SPRAY, dust, fumes, gas, smoke, etc. Can be worn with any make respirator or mask. Soft, pliable rubber frames give air-tight fit an any shape face. A few drops of water on inside of lenses keep fog off by a simple nod or shake of head. Sample $2.00 postpaid! Order today!

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Paint and Enamel Stripper. Requires no heat, current or additives. Handling information and samples available on a full line of non-flammable, water-rinsable compounds effective in removing coating systems of primers, topcoats, air-dry or bake, from ferrous or non-ferrous surfaces. Allied Finishing Specialties Co., 2641 W. Grand Ave., Chicago 12, Ill.

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Teflon Finishes are water-repellent. Liquids drain completely from surfaces coated with Teflon. Has outstanding electrical properties, and can stand change in temperature from 390° below zero to 480° above. Excellent for coating transformers, paint mixers, spark plugs and interior of piping; also production-line machinery. Most solids will not adhere to Teflon-coated surfaces, therefore no shutdowns for cleaning machinery are necessary. E. I. duPont deNemours & Co., Inc., Finishes Divn., Wilmington 98, Dela.

For more data, circle 79 on colored card.

"Dustix" Tack Rags are glassine bagged or bulk packed, are long-lasting and spontaneous combustion-proof. Help assure a perfect finish by using "Dustix" tack rags on your product. Modern 1st Aid Mfg. Co., Industrial Divn., 737-A W. Randolph St., Chicago 6, Ill.

For more data, circle 80 on colored card.

Nursery Furniture, Hampers, hospital furniture, laboratory and office furniture, toys, containers of all types, when coated with "Sanitized", resist germs, bacteria, fungi, mildew, mold and odors. Sanco Paints by Monroe Sander Corp., Long Island City 1, N. Y., the licensees of industrial finishes formulated with bacteriostatic chemicals by Sanitized Sales Co. of America, Inc., New York 16, N. Y., can be applied by dip or spray and air-dried or baked.

For more data, circle 81 on colored card.

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Instant Stripper—For metal or wood finishes. A non-flammable, non-toxic stripper which removes almost instantly, most finishes—enamels, either lacquer or synthetic (baked or air-dried), paints, varnishes, etc. V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago 39.

For more data, circle 82 on colored card.

Exposure Tests. Actual weathering, corrosion and sunlight tests, direct and under glass for quick predetermination of durability and permanency in southern Florida by South Florida Test Service, 4201 N.W. 7th St., Miami 34, Florida.

For more data, circle 83 on colored card.

"Modular" Electrostatic Spraying Systems recently developed by Binks Mfg. Co., 3116 Carroll Ave., Chicago 12, Ill., fit your present finishing without costly alteration. Modular spraying units are self-contained equipment packages. You start with just the units you need—add or subtract units as production requirements change. Provides increased coverage per gallon of finish, fewer finishing rejects, reduction in spray booth clean-up, low cost on equipment, easy installation and fast easy maintenance. Get the complete story from your Binks office.

For more data, circle 84 on colored card.

Cable Conveyor Compounds provide the sharp turns and short dips you need to efficiently make every foot of floor space pay off. Bush-Lock Cable Conveyors are custom-built on the spot from the Buschman package of standard stock components. Buschman specialists will cooperate with washer or oven manufacturers in making a survey of your plant. The E. W. Buschman Co., 4438 Clifton Ave., Cincinnati 32, Ohio.

For more data, circle 85 on colored card.

Axial Flow Fans provide perfect exhaust of fumes and vapors. Westinghouse Tubeaxial fans come complete with motor and V-belt drive ready for "in-line" mounting in duct or stack. Your Sturtevant Division Sales Engineer, or Westinghouse Electric Corp., Dept. G-10, Hyde Park, Boston, Mass., can give you complete information on all exhaust problems.

For more data, circle 86 on colored card.

Bowles Color Drift Control System offers the most practical, economical and easy-to-use method of providing unchanging original color standards. When succeeding batches of coating materials are matched with Bowles color panels, each batch can easily and quickly be made to match the original color. Result is uniform colors for all product finishes, package and equipment applications. Get the money-saving facts about this Color Drift Control System by writing Bowles Color Drift Control System, Divn. of Bowles Printing Corp., 75 Third St., San Francisco 3, Calif.

For more data, circle 87 on colored card.

"Letter Fill" for filling recessed letters, symbols and numerals with paint on plastic or metal surfaces. A bulletin describes problems involved with using coatings and dry wipes on second surface clear plastics, as well as machine applications and different types of masks that can be used. Logo Division, Bee Chemical Co., 12933 S. Stony Island Ave., Chicago 33, Illinois.

For more data, circle 88 on colored card.

Flock, both natural and synthetic, along with research and laboratory facilities, are now available from the Claremont Flock Corp., of Claremont, N. H., formerly known as Claremont Waste Mfg. Co.

For more data, circle 89 on colored card.

New Color Styling reflects the quality of furniture. Lindeman Wood Finish has both. For new colors and finishes, inquire at Lindeman's studio and laboratory in Galax, Virginia, or write Lindeman Wood Finish Company, Inc., Indianapolis 2, Ind.

For more data, circle 90 on colored card.

Strippers for Organic Finishes have been developed by Enthone, Inc., 442 Elm St., New Haven 11, Conn. "S" Strippers for solvent types of finishes such as nitrocellulose lacquers, vinyl coatings, enamels, epon or epoxy type baking finishes, and "A" Strippers for alkaline types such as used to strip phenolics from steel, enamels from plastic bases, etc. If the answer to your stripping problem is not a stock item, Enthone's research will develop the precise stripper you need.

For more data, circle 91 on colored card.

Martin's Clear Water Dip Lacquer is a protective covering for brass-plated articles supplied by the Standard Color & Chemical Co., Inc., North Bergen, N. J. It is claimed to be a 100% water precipitating lacquer which eliminates the need to dry plated articles after rinsing and before lacquering. Principal features of this product are toughness, durability and low price. Water Precipitating Thinner and thinner for the Water Dip Lacquer are available. The recommended reduction is two parts thinner to one part lacquer.

For more data, circle 92 on colored card.

Be Sure of a Perfect Finish!

"DUSTIX" TACK RAGS

Glassine Bagged or Bulked Packed. Long lasting—spontaneous combustion-proof. Prompt quotations and shipments. Write

Modern 1st Aid Mfg. Co., Ind. Div.
737-A W. Randolph St., Chicago 6, Ill.

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Your Product Made of Metal, Plastic, Wood or Glass.
Write for sample. Specify application; choice of vehicle.
RONA LABORATORIES, INC.
East 21st and East 22nd Sts., Bayonne 2, N. J.
Plants: Maine New Jersey Canada

Lanly's Conveyorized Lay-Down-Dryer does an efficient job of paint drying on acoustical board for a large world-wide corporation. If your manufacturing operations involve the application and drying or baking of a product finish, consult Lanly regarding your oven or dryer requirements. Catalog No. 560 contains a discussion of drying and baking operation problems. The Lanly Co., 2800 Euclid Ave., Cleveland 15, Ohio.

For more data, circle 93 on colored card.

Electrical Radiant Heating is fully described in a new 20-page book entitled, "Radiant Heat—Applications Unlimited". Electrical radiant heating provides greater control, as heat is directed more accurately to the product, is cleaner because no products of combustion exist in electric infrared ovens, and inasmuch as it is electrical, the modern fuel is always available in large quantities. For complete information write Department 721, Fostoria Pressed Steel Corp., Fostoria, O.

For more data, circle 94 on colored card.

Finishing Problems, whether on wood or metal products, can be solved in our research laboratory. A Tenax finish can be developed or formulated for your particular part or product. Tenax Finishing Products Co., Newark 5, N. J.

For more data, circle 95 on colored card.

Eclipse Auto-Rod is the most advanced automatic spray gun. This automatic air-operated spray gun is tough, solvent-proof and dependable. Complete information can be obtained from Eclipse Air Brush Co., 400 Park Ave., Newark 7, N. J., manufacturers of a complete line of automatic spray-painting equipment.

For more data, circle 96 on colored card.

"MAGIC" TACK RAGS
IMPROVE YOUR FINISH 100%
MAGIC TACK RAGS remove specks, lint and sand particles . . . bring out that deep, smooth luster, produce a faultless surface for white or colored finish.
Wm. Juergens Mfg. Co.
P. O. Box 143, Station C, Toledo 7, Ohio

Scotchlite & Kleen-Stik. New additions to stock items have been made for fast delivery — Scotchlite reflective sheeting, transparent paint, and Kleen-Stik pressure sensitive materials, such as paper, rubber impregnated, vinyl, acetate and glow. Advance Process Supply Co., 1442 W. Kinzie St., Chicago 22, Ill.

For more data, circle 97 on colored card.

"Kwiky-Dots" Masking Discs help reduce finishing cost and increase your production, and are heat resistant. A raised edge is provided on each disc for easy grasping. Connected strings of several discs may be removed for fast application. Stock sizes are ⅛-in. and up; also narrow masking tape, 1/32-in. in 60-yd. rolls. Pre-cut spray masks, die-cut masks, caps and plugs can be made to specifications. By-Buk Co., 4314 W. Pico Blvd., Los Angeles 19, Calif.

For more data, circle 98 on colored card.

Duralac's Alloy Primer is a bonding agent with a tenacious affinity for cadmium, zinc, galvanized steel, aluminum and other metals. Works well under vinyl, acrylic, butyrates and conventional lacquer and baking enamels. Duralac Chemical Corp., 84 Lister Ave., Newark 5, N. J.

For more data, circle 99 on colored card.

REPRINTS AVAILABLE

"To Get Better Results In Your Finishing Department" (2 Parts), price 10 cents.

"Catalyzed Silicone Coatings," price 10 cents per copy.

"Industrial Paint Samples 'Big Deal'," price 10 cents per copy.

"Cleaning and Conditioning Metal Surfaces for Coatings," price 20 cents per copy.

"A Method Engineer Analyzes Paint Selling," price 10 cents per copy.

"Filler, The Theory and Technique of Application," price 10 cents per copy.

"Finishing System for Magnesium," price 10 cents per copy.

"Automatic Viscosity Control for Mass Production Finishing," price 10 cents per copy.

"Paint Users' Tests: Be Fair; Get Results," 10 cents per copy.

"Spray Problems With Hot Lacquers," price 10 cents per copy.

"Abrasives, Their Use in Surface Preparation," price 10 cents per copy.

"Use Push Button Spray to Touch Up Marred Finish," price 10 cents per copy.

"What's the Big Plus Value In Selling Finishes?", price 10 cents per copy.

Automobile Finishing, "The Ford Finish," price 10 cents per copy.

Piano Finishing, "Gulbransen's Piano Finish," price 10 cents per copy.

"New Finishing Setup for Fluorescent Lighting Fixtures," price 10 cents per copy.

"What Makes Our Finishing Costs So High?", price 10 cents per copy.

"Lithographing Metal Sheets for Cans," price 10 cents per copy.

"Idolizing Low Gallon Cost Can Ruin a Good Industry," price 10 cents per copy.

"Viscosity Measurements," price 10 cents per copy.

"Finishing Wood Turnings In A Tumbling Barrel," price 10 cents per copy.

"Gold Lacquer on Outdoor Products," price 10 cents per copy.

Industrial Finishing Magazine

1142 N. Meridian, Indianapolis 4, Ind.

"Econotwin" is the new Hamant graining machine that doubles production because it prints or grains both sides simultaneously. Prints unlimited lengths, width is adjustable, handles strips to 9-in. high, perfect match on both sides, large inking capacity and oscillating doctor blades, are outsanding features. Hamant Tool Co., Inc., 502 Warren St., Dayton 9, Ohio.

For more data, circle 100 on colored card.

"Tapematic" is a new automatic mask, label and tape dispenser that dispenses over 400 different pre-cut, pressure-sensitive masking tapes, dispenses different sizes and shapes of printed or unprinted masks from the same roll and dispenses all masks at the operator's speed of application. Quik-Masks can be manufactured in any size and shape you specify. For details and a demonstration of the "Tapematic" write W. H. Brady Co., 733 W. Glendale Ave., Milwaukee 9, Wisconsin.

For more data, circle 101 on colored card.

Spray Nozzles by Delavan Mfg. Co., West Des Moines, Iowa, are individually tested to insure correct spray angle, capacity and droplet distribution. Delavan tapered nozzle inlet, radius orifice and swirl chamber design, minimize nozzle wear and clogging. You get longer service and reduce your maintenance costs in your metal finishing department.

For more data, circle 102 on colored card.

Daconite 5600 Cyrstal-Clear Water White Lacquer is a ready-to-spray clear lacquer, alkyd fortified, recommended for use over blond stains, light fillers, light natural woods, Masonite and metal. Has excellent cold-check resistance, and is highly resistant to scuffing and scratching. Produces a finish of good color retention and one that will not ring from alcohol, water or hot dishes. James B. Day & Co., 1872 Clybourn Ave., Chicago 14, Ill.

For more data, circle 103 on colored card.

"Modern Vapor Degreasing" is the title of a new 24-page brochure published by The Dow Chemical Co., Chemicals Sales Dept. 761H, Midland, Michigan., and gives complete information on Dow's numerous chemicals basic to the metalworking industry, such as Perchloroethylene, Trichloroethylene (for cleaning missile hardware), Chlorothene, Sodium Orthosilicate, Dowicide A, Methylene Chloride, etc. Let us help you solve your particular metalworking problem.

For more data, circle 104 on colored card.

Complete Finishing Systems for metal office furniture (or your particular product) can be engineered, planned and properly coordinated by an R. C. Mahon Co. engineer. Metal washers, dip coaters, baking ovens, dry-off ovens, paint stripping equipment, etc., are just a few pieces of the production processing equipment handled by The R. C. Mahon Co., Detroit 34, Mich.

For more data, circle 105 on colored card.

Hot Spray Improved Quality, speeds production and gives a smoother, denser, less porous film of coating material. Spee-Flo hot spray equipment can help you improve the appearance of your product, give considerable paint saving, fewer rejects, reduce overspray, cleaner booths and 25% less nozzle pressure. "Why Hot Spray?" is the title of an available case history booklet. Write The Spee-Flo Co., 6614 Harrisburg, Houston 11, Texas, for a copy, and also arrange for a free on-the-job demonstration of hot spray.

For more data, circle 106 on colored card.

"Armorsel" is the new vinyl metal coating in the same price range as baked enamel, but has five times as much abrasion resistance. Is a one-coat finish requiring no primer. Can be made smooth or with textured appearance, at approximately the same cost of baked enamel. Free booklet and sample panel available. John L. Armitage & Co., 245 Thomas St., Newark 5, N. J.

For more data, circle 107 on colored card.

Kerpon Protective Coatings, Phenolic, Epoxy, Latex Resins, etc., help cut plant maintenance costs. Minimizes corrosion in tanks, vats, pipes, etc., protect against high concentrated acids, fumes and heat, prove superior in resistance, flexibility, and reduction of deterioration under the most extreme corrosive conditions. For an easy solution to your corrosion problems write Kerr Chemicals, Inc., Box 89, Park Ridge, Ill.

For more data, circle 108 on colored card.

Paint Primers formulated with Dow Latex provide a more tough, durable coating resistant to salt spray, eliminate fire hazard and costly solvent recovery systems because water replaces flammable solvents. Latex-based paints provide a rust-preventive dip-coating excellent for all metal products. Get details from your supplier or The Dow Chemical Co., Midland, Mich. Coatings Sales Dept. 2150S.

For more data, circle 109 on colored card.

Compressed Air Dryers prevent damage due to moisture in air lines used for finishing operations. Van-Air Dryers purify raw compressor air, reduce moisture to zero dewpoint, deliver air thoroughly clean, dry and dependable for spraying, blasting, etc. Write for more information, Van Products Co., 5744 Swanville Rd., Erie, Pennsylvania.

For more data, circle 110 on colored card.

"Magic Tack Rags" are scientifically made to create the "tack" that picks up dirt, sand, and foreign matter on the surface to be finished. Will not dry hard—but retains "tack" indefinitely. Wm. Juergens Mfg. Co., P. O. Box 143, Station C, Toledo, Ohio.

For more data, circle 111 on colored card.

Agitating Equipment Catalog

A new 16-page Pneumix catalog has been released by Eclipse Air Brush Co., 400 Park Ave., Newark 7, N. J. It introduces many new items which have been added to an extensive line of laboratory and production agitators.

For more data, circle 112 on colored card.

TOMORROW'S Products Tested TODAY

A service to aid industry in producing longer-lasting and better-looking products. Quick predetermination of durability and permanency by actual exposure test in South Florida. Write us today for full information.

SOUTH FLORIDA TEST SERVICE

EST. 1931

4201 N. W. 7th St. Miami 44, Fla.

COMPRESSED AIR DRYERS

PREVENT MOISTURE DAMAGE TO SPRAYED AND BLASTED FINISHES

Van-Air ® **DRYER**

Operating for less than 2c per 10,000 cubic feet, VAN-AIR Dryers clean and dry compressed air to ZERO dewpoint—reduce spoilage in spraying, blasting, plating, drying, agitation, etc. Many capacities. Ask for brochure.

VAN PRODUCTS CO.

5744 SWANVILLE ROAD, ERIE, PA.

Despatch Finishing Systems provide maximum production with minimum manpower. Semi-automatic operation speeds work flow. Let a Despatch Oven engineer help you in recommending and creating a completely engineered finishing system to help solve your particular problems. Bulletin 51G gives information on how to achieve better finishes, faster production and smoother metal products handling. Despatch Oven Co., 619 S.E. 8th Street, Minneapolis 14, Minn.

For more data, circle 113 on colored card.

Rubberized Abrasives Explained

A new 8-page industrial catalog of rubberized abrasives for deburring, smoothing and polishing is now available free from the Cratex Mfg. Co., 1600 Rollins Road, Burlingame, California.

For more data, circle 114 on colored card.

Armour Coated Abrasives Div'n.

Arthur J. Steffens Jr. has been appointed Sales Supervisor of the Armour Coated Abrasives Division, Armour & Co., Alliance, Ohio. Mr. Steffens will supervise both industrial and retail sales in North and South Carolina and in the Eastern section of Tennessee.

For more data, circle 115 on colored card.

FINISHES CONSULTANT

It only appears impossible until it has been done.

E. A. ZAHN

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Telephone, TWinbrook 5-4349

LETTER FILL

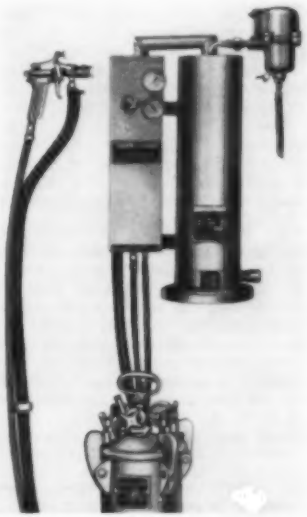
1 2 3 4 5 6

DRY
or WET
Plastic or Metal
first or second surface

Bee Chemical Co., Chicago 33, Ill.

Hot Spray Model SPC-5

The new Therm-O-Spray Model SPC-5 with 1900-watt explosion-proof air heater has large output and heats up fast. This improved spray unit has long life and offers no maintenance problems, because it has no moving parts. Its simplicity makes it easy to clean and to dismantle. It is mounted on the spray booth wall.



The unit, with air cleaner, is connected to a pressure feed tank and spray guns.

Type SPC-5 is approved by Underwriters' Laboratories, Chicago, for use in hazardous locations, Class I, Group D; and by the N. Y. Board of Standards and Appeals.

The standard single hot spray unit, model SPC-5, can be expanded into multi-color units by adding one, two or three more paint heaters (heat exchangers) which are kept hot for quick color changes.

The manufacturer recommends the use of Air Cleaner UG-½-in. on the air intake side of the units. This air

cleaner filters the air through a synthetic filtering stone. Clean air is essential for good spraying results.

This equipment is offered by Therm-O-Spray Co., Inc., 60 E. 42nd St., New York 17, N. Y.

For more data, circle 116 on colored card.

Improved Coated Abrasives

A new line of superior coated abrasive products for the woodworking, leather and plastic industries is announced by the Research & Development Department, Coated Abrasives Division, Armour & Co., Alliance, O. The new line of superior and more economical products will be called Superkut Garnet. These new garnet products give greater life and have improved cutting qualities.

For more data, circle 117 on colored card.

New Base, Top Coat Lacquer For V. Metallized Plastics

Syn-Cote Chemical Corp. of 44-27 Purvis St., Long Island City 1, N. Y., announces a new process for the vacuum metallizing of polyethylene. The finish is durable, strongly adherent, perfectly flexible and withstands the scotch tape test.

Vacuum metallized polyethylene is mirror-bright, rich and lustrous in appearance. Polyethylene, decorated in this fashion, opens an entirely new area of usefulness.

Syn-Cote's process is designed to fit into conventional metal decorating plants. Special top coat and base coat lacquers were developed to achieve the flexibility and adhesion required for polyethylene. These new lacquers are storage stable, easy to use and perfectly formulated for ideal film properties on polyethylene. The coated and metallized polyethylene articles can be dyed, by conventional methods, to any desired shade.

For more data, circle 118 on colored card.

Cleans Aluminum; No Etch

A new aluminum cleaning compound, formulated to remove oxidation, dirt, grease, light oil and carbon without etching the metal is now available.

Alumi-Brite contains a mild acid which will not etch aluminum, even on prolonged contact, and it is not harmful to the user. Can be applied by spray, brush or rag; combines acid action with detergent action to remove even stubborn grease, grime and buffing compounds.

Complete information is available from Parke-Hill Chemical Corp., 29 Bertel Ave., Mount Vernon, N. Y.

For more data, circle 119 on colored card.

Removes Oil and Grease

Magnus Magnusol X-4 has been formulated for the removal of grease and oil from metal surfaces. It is manufactured from a new type emulsifier which is odorless.

to six to ten parts water or one part Magnusol X-4 to six to eight parts kerosene, will completely remove oil when sprayed, brushed or wiped over an oily surface, followed by a pressure water rinse. Can be used on painted surfaces as well as on bare steel; can be used on polished and buffed steel parts without staining or discoloring them; can be used for tank cleaning also.

For more information write the Magnus Chemical Co., Inc., South Ave., Garwood, N. J., Dept. I.F.

For more data, circle 120 on colored card.

W. J. Hennessy; Kelite Corp.

William J. Hennessy has been appointed National Product Development Manager for Kelite Corp., manufacturer of industrial chemicals for cleaning and metal finishing, and steam cleaning equipment.

Dry and Water-wash Booths

A 4-page folder covering dry and water-wash exhaust booths, issued by Eclipse Air Brush Co., includes fan data, diagrams, and other valuable information. Send for a copy; it's free. Eclipse Air Brush Co., 390 Park Ave., Newark 7.

For more data, circle 121 on colored card.

L. B. Ross; James B. Day & Co.

Leroy B. Ross, Past President of the Paint Salesmen's Club of Chicago, recently celebrated his 25th anniversary with James B. Day & Co.

On June 27th, at a company dinner of the James B. Day 25-year club, Arthur T. Day, President, presented Mr. Ross with a $100 Bond.

Research on Special Finishes By J. Landau & Company

J. Landau & Co., Carlstadt, N. J., has launched a Special Finishes Research Division, it was announced by George Landau, president of the firm. Consultation with the company's laboratory research staff technicians can be arranged for advice on any finishing problem, and for the development of special finishes.

Landau produces lacquers, synthetics, flow coatings, electrostatic coating, epoxy finishes, butyrate coatings and corrosion-resistant coatings. A recent addition to the company line is Catalan, a new catalyst air-dry wood finish.

TECHNICAL SALESMAN WANTED.

Industrial paint salesman wanted by small, growing, aggressive paint manufacturer in New England. The man we want must be able to know some formulating. Financial arrangements will be determined upon meeting the right individual. Address IF-589, care Industrial Finishing.

WANTED TO BUY

Will buy obsolete and off-color paint and lacquer type products in white, gray, light tints, clear or clear flats. Address IF-593, care Industrial Finishing.

CLASSIFIED ADVERTISING

The rate on ads appearing in this department is $1.00 per line of 6-pt. light face type, per insertion. Minimum charge, $5.00. Ads set in 8-pt extra bold face type cost $2.00 per line, per insertion.

There may be certain firms or individuals to whom you do not want your reply sent. Simply address your communication to the box number in the ad and attach a separate list of names. Place both in a separate envelope addressed to Industrial Finishing Magazine, 1142 N. Meridian St., Indianapolis 4, Ind. If the advertiser is on the list you submit we will then destory your letter. Names of advertisers using box numbers not revealed.

FINISHING SUPERINTENDENT AVAILABLE.

Twenty years' experience in all phases of Industrial Finishing, including Manufacturing, Technical Service and Sales of Synthetic and Lacquer Materials; Specification Writing, Material Analysis and Trouble Shooting; Production Supervision, involving Wage Rates, Labor Grievances, Methods, Budget and Production Control. Facilities Planning, Design and Construction on Automatic, Electrostatic, Flow-Coating, Dip and Spray Painting Equipment; Excellent References. Address IF-585, care Industrial Finishing.

PAINT CHEMIST WANTED.

We have an excellent opportunity for a paint chemist with 3 to 5 years' experience in formulating industrial finishes. Send details of experience and salary requirements to IF-586, care Industrial Finishing.

HAVE YOUR INDUSTRIAL FINISHES MADE.

Let us quote, direct to you, the price of manufacturing your requirements at raw material costs plus a nominal manufacturing cost. We have good facilities and good technical control for most all types of industrial finishes. Inquiries from reputable firms held in strict confidence with no obligations. Production equipment from pilot batch to 3000 gallons per day. Address IF-591, care Industrial Finishing.

FORMULATOR FOR WOOD FINISHES WANTED.

Man with practical experience in formulating finishes for wood furniture. College degree preferred. This is an excellent opportunity with a leading manufacturer located in North Carolina. In reply please give full information regarding yourself and your experience. If possible send small recent photo. All replies confidential. Our employees know about this advertisement. Address IF-587, care Industrial Finishing.

EXPERIENCED SALESMAN WANTED

For wood and metal finishes, for position in Indiana and Michigan, by well-known midwestern manufacturer of industrial finishes. Salary and expenses. Address IF-581, care Industrial Finishing.

SALESMAN—INDUSTRIAL FINISHES.

Well established and expanding manufacturer in the Newark area will consider an experienced man with proven record of achievement selling industrial finishes. Our proposition and an exceptional opportunity for security and high earnings allow us to insist on highest qualifications. Answer in detail. Replies confidential. Address IF-588, care Industrial Finishing.

ATTENTION: ALL FINISH SALESMEN.

If your present line does not include varnish, you are missing a bet. PERFEX VARNISHES are unexcelled (yes unequaled) and are well known by volume finish users. Look at our display advertisement on page 7 of this magazine. If you are interested in the possibility of taking on PERFEX VARNISH in addition to your present line, write us. All replies will be held in strict confidence. PERFECTION PAINT & COLOR CO.

SALES REPRESENTATIVE

Experienced, to handle complete line of lacquer products of a quality lacquer manufacturer. Excellent opportunity for live wire. Address IF-570, care Industrial Finishing.

INDUSTRIAL FINISHES SALESMAN.

Wanted for New Jersey, experienced salesman with following, for extensive line Industrial Finishes. Some laboratory and application background helpful. Territory presently producing. Write Product Finishes Div., STANDARD-TOCH CHEMICALS, Inc., 2600 Richmond Terrace, Staten Island 3, New York.

ATTENTION INDEPENDENT SALES AGENTS.

Have your industrial finishes, (lacquers & synthetics, hot or cold spray) manufactured by a small, low overhead, well equipped manufacturer. Ideally located for quick shipments to entire East Coast. Daily capacity up to 2500 gallons. Have well known, experienced chemist for control and products development. Address IF-590, care Industrial Finishing.

WANTED.

Dirty solvents and thinners. Please send samples. Have clean reclaimed solvents for sale. Modern efficient solvent recovery service. Will process for customer, material at fraction of the original cost. ACME RECLAIMING, Inc., 1915 20th Ave., Rockford, Illinois.

DIRTY THINNERS AND SOLVENTS WANTED.

Send samples and letter giving approximate contents. GET CASH FOR SCRAP. THE JOHANN COMPANY, 13900 Grant St., Dolton, Illinois. Phone Dolton 4850.

DON'T BUY ANY ONE OF THESE ITEMS

UNTIL YOU GET OUR LOW PRICES! WE CARRY A LARGE STOCK OF REBUILT USED FINISHING EQUIPMENT INCLUDING AUTOMATIC CONVEYORIZED SYSTEMS.

SPRAY BOOTHS	CONVEYORS	PHOSPHATIZING UNITS
MIXING TANKS	FANS	CENTRIFUGAL ENAMELERS
PAINT HEATERS	OVENS	DEGREASERS
PRESSURE TANKS	LIGHTS	PUMPS, MOTORS, ETC.

GENERAL EQUIPMENT AND TRADING CO. • 2629 W. GRAND AVE., CHCAGO 12, ILL.

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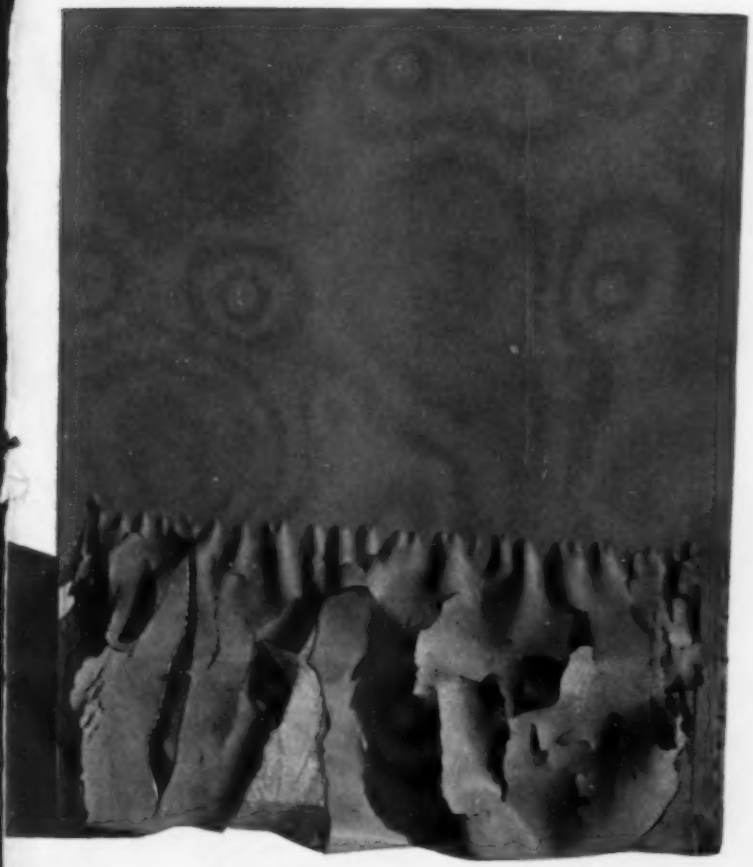
How to make organic finish stripping an exact science: Over the years to meet changing requirements, Enthone has developed a wide range of strippers for organic finishes. There are the S (for solvent type) Strippers which can dissolve or strip nitrocellulose lacquers, vinyl coatings, enamels, epon or epoxy type baking finishes. There is the A (alkaline) series which strip phenolics from steel, enamels from plastic bases. And so on. The point is that if Enthone's answer to your stripping problem is not a stock item, Enthone applied research will develop the precise stripper you need. Enthone, Inc., 442 Elm Street, New Haven 11, Connecticut.



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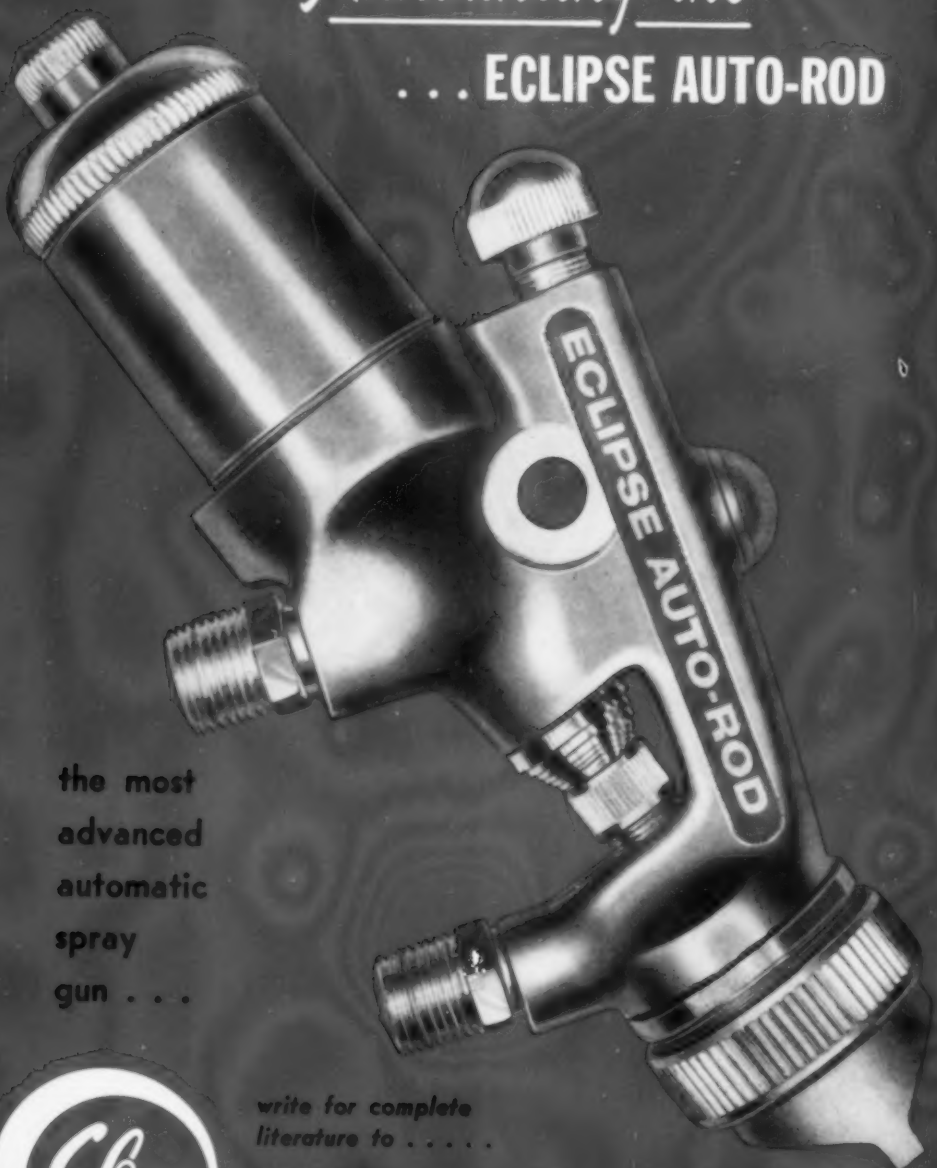

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